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Notes on R. O. T. C. Problems

 HIS paper has been prepared from the report of the Coast Artillery R. O. T. C. Normal School held at Fort Monroe, Virginia, between July 23 and 28, 1921, immediately following the annual R. O. T. C. Camp. At this Normal School eighteen Coast Artillery officers were present representing nearly all of the Coast Artillery officers on R. O. T. C. duty in the institutions east of the Mississippi River. It is through the suggestion of these officers that this paper has been prepared and that the current number of the JOURNAL is so exclusively devoted to matters relating to Coast Artillery activities and R. O. T. C. work, the general belief being that a specific setting forth of the nature and difficulties of R. O. T. C. work may be of advantage to the Coast Artillery in general in facilitating an understanding of this relatively new and important part of our work. These notes as here presented have been submitted to Colonel J. B. Christian, C. A. C., the officer in charge of the R. O. T. C. Normal School and meet with his approval.

It may not be out of place to state that the Normal School was held in compliance with instructions from the Adjutant General of the Army and the Commanding General, Third Corps Area, the idea being to take advantage of the gathering of so large a number of Coast Artillery officers engaged in R. O. T. C. work for the purpose of comparing their individual experiences and difficulties with a view to the standardization of methods and results, and for the additional purpose of considering and submitting recommendations to higher authority for any desirable changes or improvements in the conduct of R. O. T. C. work, particularly as relating to Coast Artillery units. It is believed that the inauguration of this Normal School was a wise and profitable step in the direction of increased efficiency, and that the results attained justified the conception of the idea. The work of the Normal School was conducted in accordance with a definite program and predetermined rules

of procedure, so designed as to afford an opportunity for the discussion of any phase of R. O. T. C. work which merited general attention and at the same time insured that all of the desirable ground should be covered in the time allotted. The various subjects brought up for discussion were presented by selected officers, and if the matter involved seemed likely to merit definite recommendation to higher authority, it was referred to a committee of the members of the School for further discussion and for the preparation of recommendations which at a later session were brought up for final consideration and vote. It is intended herein to emphasize only the matters which are not fully covered in the other articles in this issue on the various R. O. T. C. units, prepared by the different officers in charge of Coast Artillery units.

The principal subjects brought up for consideration were the following:

- Coordination and Cooperation with Other Units
- Faculty Cooperation and Academic Relations
- Student Morale and Its Development
- Methods of Administration and Instruction
- R. O. T. C. Camps

- (a) Organization, administration, and functioning.
- (b) Instructional Organization and system.
- (c) Essential Subjects for instruction at camp and at institutions.
- (d) Publicity and its relation to registration.

COORDINATION AND COOPERATION WITH OTHER UNITS

First of all it is an essential of success that all of the officers on R. O. T. C. duty at any institution from whatever branch of the service, must stand together and must make it perfectly apparent to faculty and students that they are all working for and representing the Army of the United States and not primarily their own branch of the service. Any indication that the Professor of Military Science and Tactics is disposed to make the unit of his own branch of the service the *ranking* unit or that the unit of any branch of the service is favored by the Military Department above others is found to react unfavorably toward military training in general and to the prestige of the Army in that particular institution.

Second, it is important that there should be brought about a more perfect coordination of the requirements made upon the officers in the different branches of the service by their respective chiefs in the War Department. For instance, there is one branch of the army which requires no drill nor practical military training under the direct supervision of an R. O. T. C. instructor, and no class room work as a requirement for completion of its R. O. T. C. course other than the satisfactory completion of specified academic courses which are a part of the regular

curriculum of the college. The result of this condition is that the presence of an R. O. T. C. unit of this branch of the service alongside units of other branches results to their detriment, due to the fact that students can enroll in one R. O. T. C. unit and receive compensation from the government for doing no more than they would do during the academic year in the pursuance of their own educational preferences. Aside from this rather extreme condition there is an actual disproportion in the amount of work required from the students in different branches of the service directly under R. O. T. C. instructors. With the best efforts on the part of all officers at a collegiate institution, complete coordination and cooperation can not be effected without the establishment by higher authority of uniform requirements as to amount and character of instruction to be given.

Again it is desirable from the standpoint of efficiency that the instruction in many subjects which are common to units of different branches of the service should be given under the supervision of one officer. In this way different officers are able to concentrate on a few subjects, thus giving better instruction, and in addition an economy in time is effected by enabling each officer to handle larger classes, through the combining of the students from units of different branches of the service.

FACULTY COOPERATION AND ACADEMIC RELATIONS

At a distinctly military institution, the faculty, while it expects more of the Department of Military Science and Tactics, is undoubtedly willing to give more, and, too, the department is a necessary and integral part of the College. On the other hand, a Military Department in a College at which it has recently been established is, in a way, on trial and the faculty may be more or less skeptical as to its value and therefore reluctant to grant what may be asked.

Although methods must vary at different places, it may be stated with confidence that faculty cooperation is the most important essential in the development of the military department.

How, then, may faculty cooperation be secured? Again, the methods taken to attain it must vary greatly at the different institutions. Let us first look at the conditions at a University where a military department has only recently been established as that situation must have had its counterpart at some time or other at many other places.

Some members of the faculty may be found who are decidedly and even bitterly opposed to military training as such. It is difficult to analyze the reasons for this attitude but we all know that it exists in all walks of life. Another element of the faculty may be in hearty accord with the aims of the military department while the majority (at a non-military college) know little about the work being done and are lukewarm in their attitude toward it. One of the first steps, therefore, in securing cooperation is to cause the latter to take an interest in the de-

partment and find out what is going on. Now these men will judge the Military Department by the standards of the departments to which they belong. Many of them have preconceived notions, in spite of the World War and even in spite of the active participation of some of them in it, that military training, at least at colleges, consists in saluting, drilling, and calisthenic exercises. Many of them are even enthusiastic about military training as they conceive it to be given and think it is a fine thing for the students to learn to walk with head erect and get a lot of outdoor exercise but their attitude is quite different if you suggest that the military department is on the same level as their own.

The question then becomes one of showing other members of the faculty that a student, to complete satisfactorily a military course, must demonstrate certain attainments in the military art in addition to having a healthy body. They judge the students in their departments by their grades and the grades depend upon mental ability and not upon character as a rule. In general, hard study and the acquirement of high academic grades through demonstrated ability in the class room, coupled with other features of college life, build character, though this is not always the case. The fact remains that the standard of judgment is based upon class room grades and that the development of character through the exercise of responsibility and disciplinary training in general is not appreciated in its true light. Moreover, it must be admitted that, at many institutions where the students are in formation but once a week and where there is no military life at all, the disciplinary training is of little or no value. Those who face such a situation must look to the summer camps to fill this need.

In view of this situation, many officers believe that the military courses at a non-military institution should be almost entirely theoretical, at least until the department is firmly established. Of course, the theoretical work will not amount to much unless the students have some incentive to put forth their best efforts and the most valuable incentive is the securing of credits for the work as in other departments. Granting of credits is dependent upon faculty action and favorable action will not be forthcoming unless the theoretical courses are up to the standard. To bring these courses up to the standard without the lever of credits to make students do good work is a problem in itself.

If, however, it has been possible to establish good theoretical courses, the various department heads, who have perhaps been uninterested in the Military Department, will begin to discover that some of their students who are in the R. O. T. C. are pursuing courses that are not unlike some of their own in the way they are conducted and that these students are learning some things that are rather helpful in their other work: the Deans, in questioning students, will find that some man in the advanced course, for instance, has to study just as hard to get a good grade in that course as he does for any other subject he is taking. When

that occurs, the Department of Military Science and Tactics will have begun to be recognized as on the same academic plane as other departments of the college. When the Military Department has sufficient prestige to occupy its rightful status at the college, it will follow that the student body will hold the R. O. T. C. in proper esteem.

When the members of the faculty will approach any question presented by the Professor of Military Science and Tactics with thoughtfulness and, at least, with an open mind, then real faculty cooperation may be expected and helpful academic relations will have been established.

When this desirable condition has been brought about, it may be possible to devote more time to what may be classed as disciplinary training, as the way will have been prepared for it to be regarded in its true light by the former skeptics of the faculty.

Faculty cooperation has another function in addition to its primary one of advancing the interests of the local R. O. T. C. unit, and that is to bring about interest in, and knowledge of, military affairs. The military policy pursued by our Government is eventually based upon the judgment of the people as a whole, and, for that judgment to be sound, there must be a more widespread knowledge of military history and policy and military matters in general. Much will have been done if interest in military affairs is stimulated at centers of learning.

STUDENT MORALE AND ITS DEVELOPMENT

Since "morale" is a state of mind, it is evident that everything that affects the student's state of mind has a bearing on his morale. Our interest is in those things which make the student favorable to the Reserve Officers' Training Corps and to that which the Government is endeavoring to accomplish through this corps.

Those conditions and activities which favorably affect student morale may be roughly classified under four general headings, viz:

- (1) Material aides to morale.
- (2) The relation of the Student to his R.O.T.C. work.
- (3) Relation Between Officers and Students.
- (4) The reward for R.O.T.C. work.

The material aides to the development of morale which have proven useful are:

- (1) R. O. T. C. dances.
- (2) Membership of students and officers in societies and fraternities such as the American Legion and the intercollegiate honor fraternity, Scabbard and Blade, which encourages patriotism and R. O. T. C. work, and which tend to promote mutual confidence between students and officers.
- (3) Sponsors.

(4) Encouragement of popular activities that are related to R. O. T. C. work, such as rifle competitions.

(5) Publicity of R. O. T. C. work, such as ceremonies witnessed by prominent persons, accounts of R. O. T. C. activities in the college and in local papers, military exercises of a spectacular nature at commencement time or at other times when they can be witnessed by alumni and visitors.

(6) A band may be said to be essential if any pretense at being "Military" is to be made. Any sacrifice which must be made for the development of a good military band is worth while, as a band will produce an improvement in the unit as a whole which will more than make up for the things given up to attain it.

The development of morale through the student's relation to his R. O. T. C. work includes all of those considerations which impel him to pursue the course for the sake of the work itself rather than for the external advantages accruing from it. Some of these things consist in:

(1) Impressing him with the importance of the work. This, however, is only one small factor, and by itself will not do a great deal.

(2) Making the work interesting by showing the relation of each part of the work to similar things in other undertakings, for example, how a base line is useful not only in artillery work, but how the same methods are used in precise surveying by the Coast Geodetic survey; a comparison of the obturator with gas checking devices in other engines.

(3) Giving the student a sense of accomplishment. He should leave each instruction period with a feeling that his time has been well spent and that he has actually done something worth while.

(4) Showing him the relation of the subject to useful things in everyday life. No effort is required to interest the student in motor transportation as it is obvious to him how he can utilize this information. Practically everything given in the Coast Artillery course is in some way associated with other things of interest to the engineering student.

The subject Relations Between Officers and Students refers to the attitude of each held towards the other. The officer must demonstrate to the student that there is absolutely no self interest back of any of his dealings with the student, and that all of his official acts are for the accomplishment of some good purpose. He must take the time to explain reasons to individual students who do not readily accept his statements, and must show them that his demands are reasonable and not arbitrary or unnecessary. If he is wrong in any particular instance, the officer must admit it. An officer can accomplish but little until he has the confidence of the students that he is absolutely fair. Reprimands must be given solely with a view to preventing a repetition of a wrong, rather than for the purpose of giving the officer a means of venting his dissatisfaction at a wrong already committed. Officers

must be careful not to make promises that they may not be able to fulfil, on account of subsequent changes in policy.

The present compensation for R. O. T. C. work in money and a reserve commission is adequate as a material reward. The money, in fact is to be considered not as a compensation but as a means of making it possible for the student of limited finances to devote the necessary time to the course and to the camp. The real reward must come from the satisfaction that the student derives from it, and from the approval of his fellow students for taking it. In order that he may have the approval of others it is necessary that enrollment in the R. O. T. C. be generally considered "the thing to do." The action necessary to create this sentiment is the same as that required to make the average American feel his obligation to do his part towards national defense in time of peace.

METHODS OF ADMINISTRATION AND INSTRUCTION

In the consideration of this subject those who are not on R. O. T. C. duty should attempt first of all to visualize a condition which no officer on R. O. T. C. duty can escape, and that is the difficulties thrown in the way of military instruction by reason of the fundamental control of the college schedule in practically every college. The necessary coordination of the various academic departments of the institution can be assured only by the adoption of a basic outline for the college schedule so adjusted as to permit the proper sequence of courses, the utilization to full capacity of laboratories, shops, and lecture rooms, and at the same time to prevent conflicts in the requirements made, both of the academic staff and the students. Now this basic schedule has to be so worked out that concord and progression are assured within each of the academic departments. On the other hand the Military Department like the Department of Physical Training, embraces in its enrollment students from all other departments in the institution. The result is that first of all it is frequently quite difficult to find even a single hour during the week when all of the students enrolled in the Military Department may be assembled together for infantry formations, and in some cases not even enough can be assembled at one time to carry on the practical instruction in the duties of the range section. Accordingly, in many instances a large part of military instruction must be given to very small sections, which are often not anywhere nearly the same size, so that the same instruction must be frequently repeated. For certain elements of military instruction, involving practical work in which careful supervision of the individual student is desirable, this condition is an advantage. On the other hand for many other features of the instruction it is a disadvantage, such for instance as company and battalion drill and lectures. However, the condition exists and even under the most favorable circumstances its disadvantages can never entirely be overcome in R. O. T. C. work.

A considerable part of the R. O. T. C. curriculum can be imparted by lectures. • In this connection it is important to observe that the officer owes it to his profession to insure that all of his lectures are so carefully and logically prepared, so concisely worded, and so forcibly expressed, that they will compare favorably in the student's mind with the best work of professors in the other academic departments of the institution. Furthermore, whenever possible each lecture should be a preliminary for some actual accomplishment and individual effort on the part of the student, either as paving the way for quizzes, practical instruction, or the solution of problems. Experience has shown that the assignment of problems and the requirements for quizzes and other written work frequently involve more of a drain upon the time and energy of the military instructor than on instructors in other departments for the simple reason that the number of students per instructor in the military department is generally much larger than in other departments of the institution.

In the conduct of practical instruction, as indeed in all other parts of the R. O. T. C. Course, a definite effort should be made by the officer not only to insure that the work is progressive and interesting from the military standpoint, but that as well a definite relation of usefulness can be made clear to the student between the things which he learns in his R. O. T. C. work and the subjects which elsewhere command his interest in the college or in life. In Coast Artillery units this is readily possible, at least insofar as engineering students are concerned, in the instruction in such subjects as orientation, fire control apparatus, and motor transportation.

Too much emphasis can hardly be laid on the importance of impressing the student with the tactical principles, relations, and necessities involved in every item of military information which is being imparted to him. It frequently occurs that the academic courses pursued by the college man seem to him to be separated into water-tight compartments of human knowledge. It is not always easy for the student to trace the relationship which exists between all the different fields of science and the arts, in each of which he has to delve. To whatever extent this may be the case in his other college work, in the Military Department at least his attention should be constantly focussed on the dominating control of tactical considerations over each detail of military technique which is imparted to him.

Closely allied with the consideration of methods of instruction is the subject of the administration of the military department. The offices and store rooms used by the military department should be models of efficient arrangement, of cleanliness, and of order. Aside from the records required to be kept by the War Department, there are generally required by the institution itself records of the progress and standing of each student, with reports on specified forms at the end of each semes-

ter and at other times. The prestige of the military department, among the other departments of the institution, can well be bolstered by the promptness, neatness and accuracy with which the reports required by the institution are submitted, and as well by the prompt return of correspondence referred to the military department for action. In many institutions a clearance system is in operation, which includes a statement on a prescribed form as to whether or not the student has any property shortage in the military department for which he should pay before being cleared on his departure from college. Needless to say the property records in the military department should be in such condition that these clearances can be furnished promptly and with precise accuracy. In many institutions the custody of all military equipment is placed in the hands of the Professor of Military Science and Tactics. Not only to safeguard the interests of the institution and of the government, but as well as an example of military efficiency, the entire military equipment should be cared for with the greatest regard for cleanliness, orderly arrangement, and accessibility. In some institutions the college authorities authorize the employment of a certain number of students to assist in the record keeping and care of the equipment in the military department. Again, in other institutions payment is made from college funds to all or a part of the cadet officers and non-commissioned officers for the assistance required of them in military instruction or in the maintenance of military discipline.

One feature of R. O. T. C. work which calls for the most painstaking attention on the part of officers is the utilization of the regular enlisted personnel, and the relations of these men with the student body. For the most part it may be said that the regular non-commissioned officers and privates on R. O. T. C. duty have fitted in to the rather unique requirements of their station with excellent success. However, it is important that the high standard of these men should be maintained both in the dignity of their relations with undergraduates and in their personal conduct on the campus and elsewhere. Furthermore, if a non-commissioned officer who has lacked the good fortune to acquire a control of correct grammar is called upon to lecture to college students, the effect may very easily be to minimize in their minds the validity of his information by reason of the inaccuracy of his expression.

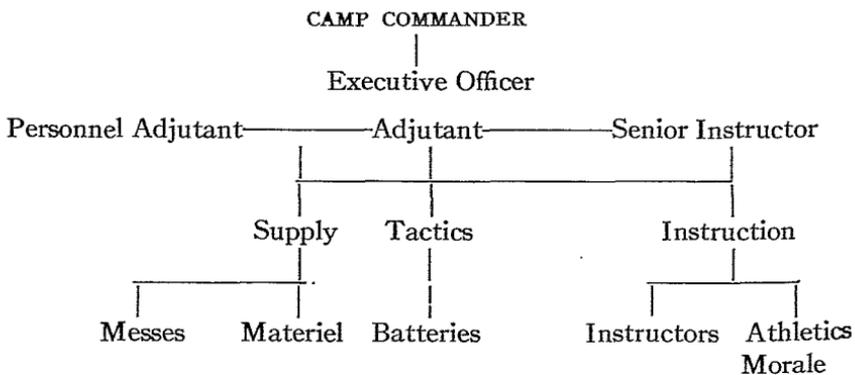
Closely related to instruction and administration in the military department is the subject of discipline. The extent to which any attempt toward the inculcation of discipline is opportune in any R. O. T. C. unit depends largely upon the nature of the institution. In some institutions instruction in military discipline is entirely out of place, while other institutions are wholly military in their regime to the extent that the responsibility for the entire college discipline of the student body is vested in the Professor of Military Science and Tactics. Consequently, any observations on this subject can only be extremely general

in character. However, this much may be said. Both the idea and standard of discipline which should be inculcated must be based upon an absolute and apparent impartiality, must be devoid of any meaningless rigor, and must to the greatest extent possible appeal to the pride and honor of the student rather than to any motive of fear.

R. O. T. C. CAMPS

(a). ORGANIZATION, ADMINISTRATION AND FUNCTIONING

The following organization for R. O. T. C. Camps is suggested for the future.



Notes on Personnel—

- a. Camp Commander.
Officer on R. O. T. C. duty not essential. Most desirable to have an officer familiar with local post administration.
- b. Senior Instructor.
Officer on R. O. T. C. duty essential, specially selected for special qualifications and experience.
- c. Executive Officer.
Duties of Executive and Adjutant might well be combined if there is a shortage of personnel.
If Camp Commander is not an R. O. T. C. Officer, Executive Officer should certainly be.
- d. Adjutant.
An R. O. T. C. Officer desirable.
- e. Personnel Adjutant.
If duties of Executive and Adjutant are combined, Personnel Adjutant might well add some instruction to his duties.
- f. Supply and Mess Officer.
An Officer intimately connected with the camp necessary, not necessarily an officer on R. O. T. C. duty but one familiar with local conditions of supply.

g. Battery Commanders.

Officers on R. O. T. C. duty specially selected for their suitability.

Insofar as the opinion of the student is concerned the success of the camp depends absolutely upon the efforts of the Battery Commander. Considerations of energy, tact, judgment, and interest should dominate. To add prestige to the position of the Battery Commander he should be able to give instruction as an assistant to the instructional staff in subjects in which he may be qualified and interested.

There should be but one Battery Commander for each battery of 100 students, but he should be relieved from all other duties and should have a capable non-commissioned officer as an assistant. Division of the responsibility for the administration and discipline of a battery between two or more officers will not result in cohesive effort.

h. Instructors.

A staff of selected specialists from among R. O. T. C. Officers under the direction and control of the Senior Instructor. They should have no administrative duties, but should be primarily responsible for instruction.

i. Athletic and Morale Officer.

A position of great importance to the success of the camp and demanding great energy, initiative and interest. Each student should be sent away at least with an ability to swim 50 yards.

j. Enlisted Personnel.

The presence of the noncommissioned personnel on duty at the colleges is most necessary to the success of any camp.

They are familiar with the conditions and requirements of the problem and can not be replaced by personnel detailed for the purpose from the local garrison. Clerks for Headquarters may, however, be drawn from the local personnel.

Administration.**a. Channels, interior.**

The Adjutant's Office should be the channel through which all communications pass within the camp.

b. Channels, exterior.

The introduction of an additional link in the chain of administration by placing the camp under the Coast Defense Commander rather than directly under the Commanding Officer of the Coast Artillery Training Center does not offer the difficulties which might seem apparent. It appears to be more satisfactory in that it thus gives that Coast Defense Commander an interest in the welfare and success of the camp which he might not have if it were removed from his command.

c. Batteries.

The standard barrack building used by the camp accommodates two platoons of 25 men each very comfortably: this is a convenient unit for instruction purpose. A battery of four platoons is a convenient unit for administration and discipline, by one officer.

General.

- a. The use of civilian labor for kitchen, messes and police is desirable and necessary. They should, however, be closely supervised by Mess Sergeants and a Police Sergeant specially detailed for that purpose.

(b) INSTRUCTIONAL ORGANIZATION AND SYSTEM

Instruction at camp should be confined to practical work. No study periods, recitations, or examinations should be prescribed.

A program of instruction should be issued to R. O. T. C. officers and non-commissioned officers at least one month before the camp is to open. This should include assignment of all personnel, that each person may see what others are doing and realize scope of activities.

Associated activities should be grouped and have an officer specifically designated as in charge. Officers in charge of activities should, upon receipt of assignments, submit schedules and lists of materials needed for those activities.

Students should not be at required work for more than an aggregate of six and one-half hours daily in the Fort Monroe climate. Instruction periods should begin early and the last should terminate not later than 3:30 P. M. Evening work should not be required.

The instruction period should be long in order that instruction in each subject may be thorough and that time wasted in marching to and from activities and in changing clothes may be the minimum.

Train and motor transportation should be used freely to avoid waste of time. Time for recall from any activity should find the unit on its parade ready for the command *Dismissed*.

No activity should be required or morally expected for July 4th.

Swimming and life saving should be featured and made compulsory. It contributes more to the success of camp than any other single activity.

Athletics, singing, musical performances, and other amusements should be carefully planned and put forward. There should be nothing compulsory along the amusement line. Get it by show of interest and their desire to have it. Have a clear line of demarkation between work and play and inject the element of competition into both.

Sight-seeing trips to local points of interest should be arranged for each Saturday morning. Transportation shortage makes it advisable to send a portion to each point each Saturday and to rotate details.

Strict, fair, manly discipline should be initiated with the arrival of the student at the wharf or station and maintained throughout camp.

This standard involves the necessity for giving him the maximum of liberty consistent with the personal conduct to be expected of prospective officers.

Honor and sense of duty and responsibility are too often confused. An honor system should be used but its observance alone will not cause full performance of duty and meeting of responsibility. The latter are separate desirable personal characteristics to be developed in the R. O. T. C. student and require a penalty system in conjunction with an honor system.

Formal inspection of camp or of organizations should be reduced to a minimum. Battalion ceremonies should be held at least once, perhaps twice, a week.

No attempt should be made to have Advanced Course students act as instructors for Basic Course students. The former are fully occupied in acquiring information for themselves.

Students should be organized into batteries for administrative and instructional purposes.

All Advanced Course students from an institution should be in the same Advanced battery, and likewise all Basic students in the same Basic battery but Advanced and Basic students should not be in the same battery.

In making up batteries north should be put with south, east with west, military with non-military, so as to get a liberal education and acquaintance for all.

A platoon of about 25 students, there being four platoons to a battery, is a convenient unit for instruction. Material and instructors being available, two to four platoons should be sent to an activity simultaneously.

Each student battery should have assigned to it one R. O. T. C. officer to administer the student battery and to accompany and instruct it on all of its assigned work and one very reliable non-commissioned officer to be Mess Sergeant, Battery Clerk, and non-commissioned officer in charge of quarters. No officer should be assigned to a battery containing students from his institution.

Each activity, Orientation, for instance, should have R. O. T. C. personnel permanently assigned to it in accordance with the number of students to be instructed as follows:

1 Platoon (approximately 25 students) 1 officer and 1 N.C.O.

2 Platoons (approximately 50 students) 1 officer and 2 N.C.O.

4 Platoons (approximately 100 students) 2 officers and 4 N.C.O.

This personnel, together with the two officers mentioned above, is the minimum which can approach the almost individual instruction required by students from the several R. O. T. C. institutions in the several stages of instruction.

Officers assigned to batteries should keep conduct record and assign

conduct grade at end of camp. Officers in charge of activities should be furnished a roll of the unit to attend. On this they should note manner of duty performed by each student and return it to Senior Instructor. At end of camp all officers sitting in conference should then determine whether a particular student is "qualified" or "unqualified" as *officer material*. There should be no other systems of grading or rating individual students.

A student battery should do all its work, target practice included, on a particular battery and learn that one materiel well. The student battery should then be shown all other materiel.

Infantry work of camp at this latitude should be given in early morning and should be attended by every officer and non-commissioned officer on the instruction staff at the camp. Small arms target practice should be concentrated upon and be a feature of R. O. T. C. camp.

Basic students who are mature can get very great benefit from Basic camp, but it is an observed fact that the vast majority are immature, do not appreciate opportunities offered or the great expense which the War Department suffers in order to put them in camp, that their presence makes it obligatory to diffuse the available instructional staff, which results in faulty inadequate instruction for the important Advanced Course students, and that they lower the general standard of camp and make it difficult for the sober, well meaning Advanced students to take any great amount of pride in their advanced camp. Moreover, Basic students who merit any Government expenditure can get great profit from a properly conducted Citizen's Military Training Camp if they are there organized into proper artillery units, and thus leave available R. O. T. C. personnel free to concentrate upon advanced students in Advanced Camp thus making it possible to give real value to advanced camp.

At some institutions the details of R. O. T. C. requirements are not being met and conditions are such that no Professor of Military Science and Tactics can cause them to be met. At such places the Professor of Military Science and Tactics advocates Basic camp with the idea (even though not admitted) that it is the only process by which R. O. T. C. students can approach Officers Reserve Corps requirements. R. O. T. C. units should be removed from such institutions as seem to require a Basic camp for its students. Whatever action may be taken in this matter should be the same for all branches of the army.

No basic student should be granted any delay in reporting to camp, and this delay for Advanced students should be reduced to the minimum.

Contrary to what may be the view of the average *good officer of experience* who has not been on R. O. T. C. duty, this duty requires such knowledge of human nature in general and of the typical college student and college conditions in particular as can be mastered only by

R. O. T. C. duty. Officers handling R. O. T. C. matters in the War Department and at Corps Areas should have had experience on R. O. T. C. duty, because it is only men who have been successful in handling difficult R. O. T. C. problems at colleges who can truly guide the inexperienced in their duty and give the R. O. T. C. movement the development which its importance to national defense merits.

The local military authorities at the site of the camp should give the R. O. T. C. Camp Commander every facility in personnel and materiel but should have no other responsibility for the conduct of the camp.

The Senior Instructor, an R. O. T. C. officer, should be held responsible for the initiation and execution of the training program.

Officers and non-commissioned officers who have put forth their best efforts for a college session and an R. O. T. C. camp need leave, recreation and recuperation in preparation for the college session to follow. The period between the close of camp and beginning of the next college session is the only one available for their relaxation. It should be announced by the War Department that R. O. T. C. personnel who have been on duty at an R. O. T. C. camp will not be sent, in time of peace, to Citizens' Military Training Camps by Corps Area commanders.

R. O. T. C. duty is an excellent education for Army personnel as well as the R. O. T. C. student, and it is a wise utilization of this personnel to place greater numbers on R. O. T. C. duty, thus permitting more thorough instruction and higher standards for prospective reserve officers. The idea that such details constitute undesirable overhead is a mistaken one. The prospective cut in the number of non-commissioned officers on R. O. T. C. duty should not be made. That number should be increased.

Inoculations monopolize about 15% to 20% of the students' instructional time at camp. No student should be ordered to an R. O. T. C. camp unless he has had all the necessary inoculations and can show his Professor of Military Science and Tactics certificate to that effect.

Much change is due in almost every phase of R. O. T. C. procedure, particularly in total R. O. T. C. courses and their division between college and camp (minimum specifications for Advanced R. O. T. C. camp attendance) and in the coordination of courses and requirements for units of the several branches of the Army. Sound conclusions can be reached only by thorough study by R. O. T. C. officers of the several branches in conferences.

The Programs of Instruction for previous camps have shown the following shortcomings:

(a) Effort was made to cover more subjects than could be treated with sufficient thoroughness in the time and with the instructors available.

(b) The method of handling the subjects did not show the relation of the one to the other.

In order that these conditions may be improved it is recommended that the following policy be observed in drawing up the programs of instruction for future camps:

(a) That the number of subjects be reduced so that only the major subjects appear on the program for emphasis.

(b) That all subjects pertaining to Artillery (minor auxiliary subjects) be given at the battery so that their relation to the other operations at the battery will be evident and be appreciated by the student.

The following outline has been carefully drawn to embody these ideas and it is recommended that it be followed for the 1922 camp. Small Arms Target Practice, 155 mm. G. P. F., the Gun Battery and the Mortar Battery as given in the program and shown by the table below are the main objectives and the attainment of proficiency with them should in no way be jeopardized by other considerations. The position of other subjects shown in the program is suggestive but no change in their position should violate the objective enunciated above.

	Fort Monroe				Camp Eustis
Btry	1st Week	2nd Week	3rd Week	4th Week	5th Week
"A"	S.A.T.P.	155 GPF	12" Seacoast Guns	Mortars, Railway	
"B"	155 GPF	S.A.T.P.	12" Seacoast Mortars	Guns, Railway	
"C"	12" Seacoast Guns	S.A.T.P.	155 GPF	Mortars, Railway	
"D"	12" Seacoast Mortars	155 GPF	S.A.T.P.	Guns, Railway	

The scope of the subjects of instruction should be:—

(A) *Advanced Course*

1. Infantry.

Practical instruction in the school of the squad, platoon, and company in close order drill.

Duties of officers and non-commissioned officers.

2. Battery Commanders' Period.

Practical work in battery administration.

Military Courtesy.

First Aid, Health and Sanitation.

Inspections.

3. Mortar Battery—Rifle Battery.

Practical work on care and operation of materiel, drill, handling of explosives, fire control and battery communications, bore sighting and orientation. Sub-caliber practice. Preparations for and conduct of target practice.

4. 155-mm. G. P. F. Battery..

Practical work on care, storage, use and maneuver of battery.

Emplacement and orientation of battery, drill and target practice.

Care, use and operation of tractors and trucks.

5. Anti-Aircraft Battery.

Explanation of materiel, fire control system, care and use of projectiles and fuzes, proper sites for batteries, organization and density of defenses.

6. Small Arms Target Practice.

Instruction in use of Rifle and Pistol. Instruction and Record Practice with Rifle and Pistol. Competitions.

7. Equitation.

Bitting and saddling, care of mount, leads, aids and riding.

8. Swimming.

Instruction in strokes, conservation of power, life saving and qualification.

Pleasure bathing and swimming.

9. Games.

Tennis, track, baseball, indoor baseball and water-polo contests for recreation and competition. Voluntary equitation.

10. Trips.

Visits of instruction to Coast Artillery School Plant, Langley Aviation Field, Newport News Shipyard, Norfolk Navy Yard, Yorktown and to other points of interest.

The program should provide hours of instruction for each student as follows:

	Hours at		Total
	Fort Monroe	Camp Eustis	
1. Infantry drill.....	17	0	17
2. Battery Commander's Period.....	24	0	24
3. Mortars or Guns, all operation leading up to, and the conduct of Target Practice.....	38.5	33	71.5
4. 155-mm. G.P.F.....	22.5	0	22.5
5. Anti-Aircraft.....	2.5	0	2.5
6. Small Arms Target Practice.....	22.5	0	22.5
7. Equitation.....	5	0	5
8. Swimming.....	10	5	15
9. Games.....	28	0	28
10. Trips.....	16	4	20
11. Ceremonies.....	7	0	7
12. Inspection of Artillery Materiel.....	0	3	3
Total.....	193.0	45	238

Summary	Approximate %	Hours
Artillery.....	42	99.5
Infantry Drill and Ceremonies.....	10	24.0
Small Arms.....	10	22.5
Battery Commander's Period.....	10	24.0
Equitation.....	2	5.0
Trips of Instruction.....	8	20.0
Supervised or voluntary athletics and amusements.....	18	43.0
Total.....	100	238.0

The fractional week at the beginning of camp is designated as "Battery Commanders' Period" for such instruction described thereunder as may be practicable and for organization, uniforming, equipping and settling in camp.

Pure instructional time equals 195 hours.

Pure Artillery time equals 99.5 hours, approximately 52%.

Time is specifically set apart for supervised and voluntary athletics and amusements to insure that they receive attention.

At Camp Eustis, batteries and firing points can be made available.

(C) ESSENTIAL SUBJECTS FOR INSTRUCTION AT CAMP AND AT INSTITUTIONS

It is believed that with the following exceptions the subjects now taught at our institutions and at camp be continued in our schedules:

(A) AT INSTITUTIONS

(1) Military Courtesy and Discipline should be practical and included in the Infantry course as a part of the practical infantry instruction.

(2) Military History and Policy should be omitted as such and Military Policy should be taught from regulations governing the R. O. T. C. only.

(3) Physical Training should be omitted as it is covered in nearly every college by the department of Physical Culture.

(4) Company Administration should be omitted because regulations change so frequently that it is impossible to keep up with them. R. O. T. C. graduates are commissioned 2nd Lieutenants and as such they can acquire the necessary instruction as subalterns and administration could be made a prerequisite to their promotion to the grade of Captain, the subjects to be covered in an O. R. C. Training Camp at some future date.

(B) AT CAMPS

(1) Orientation should be taught at institutions only, except in so far as its practical application is necessary in artillery work in camp.

(2) Theoretical Motor Transportation should be omitted. Each student should be examined and if it is found that he is proficient in driving, he should be given a practical course in the laboratory. If he cannot drive he should be taught to do so. The last week of instruction should be used for instruction in convoy work.

(3) Signalling should be omitted.

(4) Practical problems should be omitted except in so far as they are used in the practical artillery work.

(5) Automatic Rifles and Machine Guns should be taught at our institutions. Practical demonstrations might be given in connection with the course in small arms firing.

(6) First Aid and Sanitation is given at institutions and should not be repeated in camp.

(7) Field Engineering should be taught at institutions and only its practical application in artillery work should be taught in camp.

At our institutions we should teach all theoretical subjects and such practical subjects as may be possible. The idea we should have in mind is to prepare students for an entirely practical course in camp at the end of the Junior year. All subjects not having a bearing on summer camp should be left for the Senior year.

(d) PUBLICITY IN ITS RELATION TO REGISTRATION, R. O. T. C. CAMPS

This subject may be discussed under the following heads:

1. Publicity by personal approach to students.
2. Publicity by mimeographed sheets or questionnaires issued before the close of the term or during the school year.
3. Publicity by the college weekly paper.
4. Publicity through the local papers.
5. Publicity by making the military service popular.

Under the first head, not much success is gained either by approaching the students personally for registration for military work or for attendance at a summer camp. But there are a large number of ex-service men at the colleges who can not withhold an interest in the military activities at the college, and they can be approached favorably on one of their visits.

Under the second head, the pamphlet issued on the camp last year, which was issued to many students, did much to stimulate interest among the men in the units toward the summer camp. Questionnaires giving information concerning camps and asking for the number to attend camps can be gotten out during the term, and the number of students going and whether they desire transportation or mileage can be determined.

Under the third head, the college paper should give a column in each edition devoted solely to the R. O. T. C. The Professor of Military Science and Tactics or his assistants can insert notices, orders, information or articles in this column or it may be filled by student R. O. T. C. reporters. Also, the college paper should run a special R. O. T. C. number, containing information on all units, schedules, lists of equipment, military photographs, and articles written by the Professor of Military Science and Tactics and his assistants.

Under the fourth head, all lists of cadet appointments, schedules of parades, social activities or information from the War Department which can be printed, should be given to one of the local papers for publishing, arrangements being made so that the Professor of Military Science and Tactics can call the paper office by telephone and present the news item for immediate issue.

Under the fifth head, making the military service popular, come several other sub-heads of more or less importance as follows:

1. A system of sponsors and chaperones for companies, battalions, band, staff and regiment.
2. A distinctive uniform for the R. O. T. C.
3. A schedule of parades and ceremonies.
4. Cooperation with the faculty.

The ability to introduce sponsors and chaperones depends on the locality of the college. The young ladies in the vicinity are elected sponsors by the students, and the chaperones, generally wives of the faculty or the officers in the Military Department can be elected by the cadet officers or appointed by the Professor of Military Science and Tactics. This system has worked very well at Georgia Tech in the past years, and will probably become a permanent custom.

The distinctive uniform can be obtained by use of shoulder patches or by making use of the commutation of uniform. A comfortable and inconspicuous uniform is necessary, and it fulfills its mission when the students are willing to wear it at all times during the week, and to town.

A schedule of parades through the streets and reviews on the drill grounds should be published, and prominent military or civil officials requested to review these ceremonies. A street parade should arrange to carry all its motor equipment and guns with it, with trucks marked with conspicuous college letters painted on them, and the guns having "pet names" painted on the tubes. College officials, sponsors and chaperones should always be requested to be present at parades and reviews, and to occupy seats in the reviewing stands.

Cooperation with the faculty can aid publicity if it can be obtained. A special parade in honor of the faculty or a review to them would be greatly appreciated. Other assistance to the faculty by the loan of trucks, mimeograph machine or property in the military storeroom would obtain like assistance from them.

Side Lights on the R. O. T. C.

By "Observer"

HOULD anyone of reasonable perception inquire into the history of military education in the civil schools and colleges of this country since the year 1861, he could not but be impressed by the position in the academic circle to which it has long been relegated—a position directly comparable to the undoubtedly prominent though equally unenviable status of the well-known "red-headed stepchild." Perhaps, under the limitations of the Morrill Act of 1861 and subsequent congressional enactments, this condition has been a product of circumstance rather than a result of lack of effort upon the part of the military authorities, but with the establishment of the Reserve Officers' Training Corps, the opportunity to place military education upon its proper plane is before every officer on college duty. It is not intended here to enter into any lengthy analysis of this problem in educational mechanics, but merely to offer some light on one of its phases which may or may not disclose hidden support to those who are interested.

The principal civil contacts of the representatives of the War Department on R. O. T. C. duty are with three groups—faculty, parent, and student. Lack of support of the efforts of the college military department by any one of these groups will seriously affect its proper acceptance by the other two—hence some powerful appeal must be aroused to secure the combined support of the three. Strange as it may seem to many who enjoy the comparative security of tenure and certainty of future afforded by a commission in the United States Army, the three groups noted above are very greatly concerned with the practicality of the immediate present rather than with the projection of some military contingency or other catastrophic event in the distant future; to them the acid test of the military training offered by the R. O. T. C. lies in its general educational usefulness, in its *practical value* in civil life, and no amount of preaching by prophets, civil or military, will convince them otherwise. If the fundamental object of this training is military preparation, all very well and good, but to meet with anything approaching enthusiasm, it must possess a very real present-day, work-a-day value—and this phase must be continually demonstrated and emphasized.

Having made every effort to combine the "military" with the "practical" in his methods of instruction and to demonstrate their inter-re-

lation, and having met with sufficient success to warrant encouragement, an officer on duty at a college in a southern state has interested himself in determining to what extent the summer camps fulfill this requirement. A questionnaire to those students from his unit who had attended the 1921 R. O. T. C. camp at Fort Monroe was employed and the following questions selected from it are indicative of the direction in which information was sought.

QUESTIONNAIRE ON SUMMER CAMP

The attached questions will be answered fully and carefully by all members of the unit who attended the camp at Fort Monroe.

To be of any value, the answers must be absolutely frank and truthful and should in all cases contain reasons, not merely YES or NO. It is not expected that all answers will be complimentary—the questionnaire would be of no value if they were—but they should be the personal opinions of the writer. Write as fully and completely as you can—if there is not enough space provided, add another sheet.

It is preferred that papers be signed as evidence of good faith, but if desired, signatures may be omitted. However, every man who attended the camp must hand in a paper.

1. Age on July 1, 1921?
2. College class?
3. Academic school?
4. Birth-place?
5. Present legal residence?
6. In what state have you lived for more than six months during the past 20 years?
7. If you were in the military or naval service during the war, at what station did you serve?
8. What was your object in coming to this college?
9. What did you find were the most objectionable features of the college military work during the first two years in which you were required to take it under the terms of the Land-Grant Act? Answer fully.
10. Did you know during your college Freshman and Sophomore years that this school was founded under an agreement with the Government to give military training for which it receives a considerable income each year and that this income acts to decrease the cost to the student?
11. If you are in the Advanced Course of the R. O. T. C. what was your object in entering it? Answer fully.
12. If you were not obligated to attend the summer camp at Fort Monroe, what was your object in going? Answer fully.
13. Had you ever traveled beyond the limits of your state before going to the Fort Monroe, Camp? If so where?

14. What was the attitude of your parents or guardian towards your going to the Fort Monroe Camp? If possible, give their reasons for approving or disapproving.

15. If you had never made the trip to Fort Monroe before, describe some of the things with which you were particularly impressed on your way.

16. What were your first impressions during your first week at camp? Answer fully.

17. Give some of the most objectional features of the camp with your reasons and your ideas of how they could be corrected. Make this as complete as possible.

18. State some of the most valuable features of the camp with your reasons and your ideas of how they could be made more valuable.

19. You probably know that there were college men at the camp from every state east of the Mississippi River. With what group of men were you most favorably impressed and why?

20. With what group of men were you unfavorably impressed and why?

21. Do you think that your experience at camp gave you a better idea of the points of view on various subjects held in different parts of the country, east, west, north, south? If so why?

22. Do you think it probable that you would have had an equal opportunity to associate with men from so many parts of the country if you had not gone to camp?

23. Do you believe it a valuable quality to be able to understand the other fellow's point of view? Why or why not?

24. On what subjects were some of the most direct differences of opinion held by the men from the various parts of the country? Answer fully.

25. There is a great deal of talk these days about "nationalizing influences," that is, influences that will weld together the many different foreign elements that exist in this country. What are your views on this subject? Do you think that these camps have any value of this kind?

26. The following subjects were included in the schedule of instruction at the camp. Check each one as indicated below—

X Subjects which you found most interesting.

XX Subjects which you found least interesting.

XXX Subjects which you found would be of value to you in civil as well as in military life.

1. Infantry Training

2. Physical Training

3. Artillery Drill and Materiel

4. Signalling

5. Use of Rifle and Pistol
6. Small Arms Target Practice
7. Orientation
8. Military Courtesy
9. Motor Transportation
10. Field Engineering
11. Artillery Target Practice.

State any defects that appeared to you to exist in the methods of instruction and give any ideas that you may have as to how they can be improved.

27. State here any views you may have on the subject of military training, summer camps, etc., that you may desire to make and which have not been included in the foregoing.

REPLIES TO QUESTIONNAIRE

A number of characteristic answers to these questions are given below for what they may contain of value and interest. It may be said, incidentally, that the sources from which these answers were obtained were sufficiently numerous and diversified to be correctly representative of an under-graduate student-body numbering approximately 1000. It may also be said that the student-body of the institution is fairly representative of the college student throughout what are known as the cotton-growing states.

1. Average age—20 years, 8 months.
2. Juniors and Sophomores were in the large majority.
3. Civil, Electrical or Mechanical Engineering.
4. With but few exceptions, all were natives of the State.
5. All residents of the state.
6. Limited to this or one or two southern states immediately adjoining.
7. None were in the service.
8. The bulk of the replies indicated the objective as an engineering education at minimum cost. Several stated that they "desired to obtain training for usefulness to myself and others," but only one answered specifically that he "wanted the military training."
9. All replies were unanimous in their dislike of guard duty at night as a waste of time. Several found Reveille very "disagreeable." One found the quality and fit of the government issue uniform a source of embarrassment. "Slackness, inefficiency and favoritism" among cadet officers appeared a most objectionable feature to three. One found the restrictions of barrack life uncomfortable and the time taken from "studies" by military work a loss. Only one found "nothing but beneficial" features.
10. All except four understood the benefits derived from the Morrill Act.

11. Each reply contained very specifically the information that the student "needed the money." Practically all, however, stated that there were additional considerations. About half wanted the "training" and about half wanted the trip to Fort Monroe. One "needed the academic credit;" another wanted to broaden his personality thru military life; and another stated enthusiastically that he would have gone in for the training even if there was no money in it. Some outstanding replies follow:

a. "Many people think that when you are in the R. O. T. C. that you are training yourself to be an officer. There are other things they fail to see or neglect. This training (due to my version) develops a man's power as a leader, the celerity and preciseness of thought."

b. "It was not my love for military training that caused me to take the Advanced Course of the R. O. T. C. There were two main reasons for my doing so—first because, of the commutation received; second, because of the chance to see part of the country by going to camp. Also the chance to learn and see something of a subject I was very much interested in—Heavy Artillery and the coast defenses."

c. "Commission in case of war without having to start at the very bottom. The trip to Fort Monroe. Money received for taking Advanced R. O. T. C."

d. "Military training builds the body mentally and physically and there is no one that does not need it."

e. "At first, money was my sole object in entering the Advanced Course. Later on I saw it was educational."

12. The prospect for a pleasant trip seemed to hold out the greatest attraction, although more than half indicated that the opportunity to increase their military efficiency was very attractive. About the same number also were interested in seeing another part of the country. Some typical replies follow:

a. "To see part of the country and also to be better able to understand the Army life. And also because that kind of life holds my interest."

b. "I considered it an opportunity to travel and thereby get some practical experience. Then, too, the training would help a technical student especially for the map-drawing and the lectures. And since I am to take military in my Junior and Senior years it would be of great value to be well-trained in R. O. T. C. work. I consider the training to be of value to a student in engineering in that it gives him an opportunity to study the fortifications at the Fort."

c. "I went to Fort Monroe hoping to benefit by a summer of regular hours. Exercise, work etc., by schedule. Also, I hoped to gain something by travel and association with people from other parts of the country."

d. "To mix and mingle with people from other parts of the country

and see more of the world. To widen my knowledge along military lines. To compare boys from this college with those from others. All expenses were paid and there was nothing to lose by going for I had nothing to do at home during the vacation."

13. Practically all had visited the several states of the southern Mississippi Valley and about half had extended their movements into the Central and Western states. Only one had penetrated into the South "as far as St. Augustine, Florida. As far east as Buffalo, New York. As far west as Denver, Colorado. Through wheat-fields from Texas through Kansas."

14. Replies indicated varying degrees of approbation from "heartily approval" to a non-committal position in which the decision was left to the student, the inference being evident, however, that the expedition was regarded favorably. One stated that his parents "were not in favor of my being connected with military because they were not in position to understand my situation." Other replies follow:

a. "They were heartily in favor of this opportunity that was offered their son. All that my reminiscence will permit, two reasons are that I will be thrown with men from different parts of the country and that it afforded a good trip which might make it a possible chance to see Washington."

b. "My parents approved of my going to camp. Reasons why approved: 1. Experience to be gained. 2. Splendid vacation. 3. Opportunity to travel. 4. Physical development at camp."

c. "My father told me in his letter that he thought it would be the most valuable six weeks I had ever spent."

15. In order of popularity, the following miscellaneous objects of interest were reported: *historic surroundings of Richmond, Virginia; mountains; numerous cotton mills; terracing of farm lands; tobacco farms; Georgia orchards; variety of scenery; concrete roads; city of Washington, D. C.; commercial sections of Virginia; docks at Newport News, Virginia; Alabama mines; Mount Vernon, Virginia; blue grass section of Kentucky; factory buildings; airplanes; large bodies of water; differences of opinion expressed by travelers on trains.* One replied—"I was impressed with the mountains, cotton mills and orchards because I had never seen any of these things before. The people in the different towns on the way seemed to have a different air. Atlanta impressed me as a very busy city. The people there seemed to be in a hurry. Richmond seems to be a more easy-going town; that is, the people seemed to take their time."

16. First impressions were apparently varied and in order of reporting were: *courtesy of officers and N. C. O.'s; construction and size of fort; efficient organization of camp; good food; amusements; differences in personality of students from different sections of the country; cleanliness of the fort; ideal camp location; antagonistic attitude of*

regular enlisted men towards R. O. T. C.; heat of wooden barracks. Some outstanding replies follow:

a. "The bay being so salty and at the same temperature morning and night. The way the people entertained us."

b. "The thing that impressed me most and first was the courtesy of the officers. Also the orderly way in which they handled things. They impressed me as being men of experience and capacity."

c. "During my first week at camp I found that the Government was feeding us exceptionally well, that the daily routine was by no means a burden, and that the camp as a whole was for our benefit and was not a burdensome obligation. The camp was made up of men from some of the best colleges in the south and north-east. The Saturday night dances and bathing."

About 25% stated that there were no objectionable features; others were more specific in stating that "the instruction and work was as pleasant as could be expected" and that they "enjoyed camp as much if not more than elsewhere." The prohibition against wearing citizen's clothing when off the reservation seemed an objectionable regulation to about 25%, while the unfavorable attitude of the enlisted men toward the R. O. T. C. rankled in the minds of about the same number. Other objections were "too much gambling," "lights out too early in barracks," "sewer outlet in rear of camp site," "incompetent medical N. C. O.," and "discomforts of trip to Camp Eustis."

18. In order of popularity, the following were reported: week-end trips; practical instruction with the "big guns," courses of instruction in Motor Transportation and Orientation, association with students from many parts of the country, social life, salt-water bathing, Small Arms Target Practice, physical training, good food, and variety and practicality of instruction.

19. The representatives of the University of Michigan seem to have made friends in the ratio of 3 to 1 for their only other competitors, the Citadel of South Carolina and the University of Alabama. As one stated, "The students of the University of Michigan seemed to be older and broader men than the others and accepted our views more readily. They seemed to make better friends and were easier to make friends with." And another said, "I was most favorably impressed with the fellows from the University of Michigan. They were more social and more willing to help out in any kind of undertaking that might be started. They were all good sports and always there to help put over the right thing.

20. The burden of disapproval seemed to be borne by three colleges for reasons which, in general, may be summarized as follows: "If there was any group of men I was unfavorably impressed with, it was from _____ . These fellows generally held a different opinion and were

not as social as some of the other fellows. They seemed to think they knew it all and of course always tried to have their way."

21. Yes, without qualification. One stated: "I found that the men from the northern schools were not all the enemies of the South that many people believe. It is common belief that northern people favor complete race equality, but I found that the greater per cent of northern college men were opposed to race equality in any form."

22. No, emphatically. One stated: "I cannot think of any other place where it would have been possible to associate with men from so many parts of the country."

23. All replied decidedly in the affirmative. According to one: "I think this is a valuable quality because the other fellow nearly always knows more or less about the subject and much good can be gotten by some times taking his point of view."

24. Each reply included the so-called "negro question" as a subject of direct difference of opinion. Next in order came differences of pronunciation and enunciation, the "Japanese question," military training in colleges, political parties, labor unions, and foreign immigration. Some typical replies follow:

a. "The race question, especially the negro, was about the only question discussed. * * * * The northern boys seemed to know and appreciate the negro as a *race* while the southern boys appreciated and knew the negro as an *individual*."

a. "The Negro Question. This one question was argued more than any one question. From the first night we hit camp until we left, you could hear someone discussing it. It was one of the main reasons why the ——— bunch was disliked by me, as they seemed to think that they were no better than the negro. The Michigan bunch seemed to understand the southern point of view better than any other northern bunch that was there. They did not hold the views that the ——— bunch did."

25. The meaning of the term "foreign elements" in this question was misconstrued to refer to the newly arrived immigrant instead of the different sectional elements as intended. All replies, however, indicated a disposition to declare "America for Americans" and to regard the R. O. T. C. camps as of doubtful value as "nationalizing influences" as understood in this sense.

26. Artillery Drill, Materiel and Target Practice were reported as generally popular, altho two men recorded them as least interesting. Next in order of interest came Use of Rifle and Pistol and Small Arms Target Practice, Motor Transportation, Physical Training, Orientation, Field Engineering, Infantry Training, and Military Courtesy. Subjects specifically reported as least interesting in order of their degree of lack of interest were Infantry Training, Signaling, Field Engineering, Orientation, Military Courtesy, and Physical Training. However, the popularity of each of the above subjects was indicated in greater pro-

portion than their unpopularity. Subjects reported as of value both in military and civil life were stated in order as follows: Motor Transportation, Physical Training, Orientation, Military Courtesy, Use of Rifle and Pistol, Field Engineering, and Infantry Training. Individual statements of a general nature covering the subjects of instruction are given below:

a. "Every subject was crowded into such a short time that only an exceptionally brilliant man could understand the subject thoroughly. By giving more time to the different subjects, even if some were omitted, would be better than a hazy idea of each subject."

b. "I wish to say that a man could not choose a better place to spend six weeks of his vacation for his work is not hard, but very interesting. His meals are as good as any home affords. His pleasures are marvelous. His superiors are kind and pleasant. In fact everybody that goes enjoys every moment of his stay."

c. "As I said before the methods of instruction are all right, but the instructors—there's the point. Some of the instructors at camp this past summer, though they knew their subject, were not the sort of men that will take well with college men. I would say that the camp needs instructors who will be liked by the boys in spite of the fact that they work us, men who not only understand their subjects and can explain them but also men who have "Pep" and "Punch."

d. "I never have enjoyed five weeks any more than I did those at Fort Monroe."

e. "The five weeks I spent at Fort Monroe last summer were enjoyable ones. I don't want any better "eats" than I received there. The drill period each morning is enough to make you feel good—just enough exercise, while such things as Orientation and Target Practice were really beneficial in civil life. From the camp I learned as much as I did my last semester here last Spring. I have yet to hear the first man from here say that he didn't enjoy everything."

f. "I noticed at some of the instruction periods that the boys would become disinterested and go to sleep. Especially was this true when non-commissioned officers were the instructors."

RESUME

The foregoing is a somewhat lengthy review of information from sources undoubtedly reliable, but contained within a limited field, for it considers literally but one college in one section of the country. Even within this limitation, however, it should carry something of value to those who are interested in a search for some "utilitarian" purpose in the expenditures of the War Department; and also, to those to whom there is an appeal in its demonstration of the injection of a virile, red-blooded element into a national educational system which has long been accused of suffering from academic anemia.

The R. O. T. C. at the University of Pittsburgh

By Major C. M. S. Skene, C. A. C.



IN DISCUSSING the R. O. T. C. work at any institution a great many features of it may be brought to the attention of those who may be called upon later to hold a position at one of our universities or schools. As each one of these features presents a problem which could be written about or discussed at great length it is the purpose of this article to sketch but hastily the various difficulties encountered and attempt to present to the reader a mental picture of what he may expect should he be assigned to duty with one of the Coast Artillery Reserve Officers' Training Corps units and particularly should he be assigned to duty with the one at this institution.

The University is located in the center of the city. Pittsburg is built on a series of hills and the University property runs from the bottom of one of the steepest ones in the Oakland district up to its top. The Military Department is located in a temporary wooden frame structure, not unlike some of the war time "Y" huts, at the bottom of the hill. This building does not front on the street but is located in back of another similar building occupied by the Zoology Department of the university. The building in which the Military Department is housed also contains the drafting rooms of the Engineering Department. The other departments of the University, except the Law School, which is off by itself in the heart of the business section of the city and two or three miles from the University, and the School of Mines, are housed in modern university buildings of stone and brick. The University has grown very rapidly in recent years and until this year many classes under the supervision of other University departments were held in temporary wooden buildings. With the completion of Alumni Hall this past summer they are, with the exception of the School of Mines, now better taken care of. The Military Department is still rather cramped for space although the University assigned us twice as much space this last September as we had been allotted up to that time for our work. Prior to this fall we had had no place to set up our plotting room equipment and if two large classes met at the same hour one of them would have to be held out of doors. Now we have one large class room which will hold as many as seventy students at one time, one smaller class room which can accomodate about twenty men, a plotting room, a very small unsatisfactory office and part of a storeroom where we can set up a

sand table, a terrain board, and a puff board. Other storerooms where our materiel and equipment are stored are on top of the hill. They are not fire proof buildings and only the lighter equipment can be kept locked up.

The R. O. T. C. was first established at this University when the organization of an Infantry unit was undertaken under the authorization of Bulletin 10, War Department, March 1, 1918. A Coast Artillery unit was next established in September 1919, and later on a Motor Transport Corps unit was established. The Infantry unit was discontinued July 5, 1921, by letter from the Adjutant General's Office because of the War Department's policy of discontinuing a number of Infantry units whose percentages of students taking the advanced course were not up to the requirements. In September 1921, a Medical unit was established for the students in the University's School of Medicine.

The records and any work done by the department prior to April 6, 1920, were destroyed by a fire which cleaned out the Military Department at that time. At the beginning of the school year in September 1920, the entire R. O. T. C. enrollment numbered 112 students. By the second semester of the school year 1920-21, there was a total enrollment of 242 students. At the beginning of this year there was an enrollment of 449 students distributed as follows among the three units:— 278 in the Coast Artillery unit; 112 in the Motor Transport Corps unit; 59 in the Medical unit.

The students in the Coast Artillery and Motor Transport Corps units come from the following schools of the university:

1. School of the College
2. School of Economics
3. School of Engineering
4. School of Mines
5. School of Chemistry

Only students from the university medical school are enrolled in our R. O. T. C. medical unit.

Until this September, no Motor Transport Corps personnel had been assigned to duty here. Much of the instruction required to qualify a student as an M. T. C. reserve officer had to be covered in his regular university course. Neither the Coast Artillery officer or Infantry officer were qualified or could spare the time from their own units to hold classes for those enrolled in the M. T. C. unit in subjects not common to those required for their own units. It was found that only the university course in mechanical engineering sufficiently covered the subjects especially required for an M. T. C. unit. The enrollment for this unit up to this year has therefore been confined to students pursuing a mechanical engineering course. Other students were enrolled in the Coast

Artillery and Infantry units. As the Infantry unit has now been discontinued and an M. T. C. officer assigned here the enrollments will be divided between that unit and the Coast Artillery unit in the future.

Sixty percent of the students at this University are working their way through school or at least paying a part of the cost of their education by working during their off hours. The effect of this is that students will not take an R. O. T. C. course if they are compelled to buy their own books or equipment and the payment of commutation of rations for the work in the advanced course, which requires five hours of their time each week, is the main reason for their taking a four year R. O. T. C. course.

The students who work to help defray the expenses of their education try to arrange their university courses so that if possible all their class room work will come in the morning or as early in the day as possible, so that they may work during the remainder of the day. As a result many of them encounter difficulties in arranging classes for their R. O. T. C. work as these classes either conflict with the university courses or else take up part of the time they would ordinarily devote to earning their expenses. To obviate these difficulties the Military Department has endeavored to hold several classes in each subject in order that all students may be able to arrange to enroll in one of them.

The life of the student here is not at all like that one who has been to one of our large Universities further east, would expect to find. There are no university dormitories and the majority of the students, as their homes are in Pittsburg or its environs, live at home and make the trip from there to the university each day. There are a number of fraternity houses and here only does a student get the university life and close contact with his fellows that we are accustomed to associate with our other thoughts of university undergraduates.

There are a limited number of athletic teams, the most prominent by far being the football team which year after year ranks close to the top of the best teams among the eastern universities. Prior to the large football games mass meetings are held to organize cheering sections and to instill the "Pitt" spirit in the hearts of the undergraduates. These mass meetings and the cheering sections at the football games produce fine results in the loyalty and patriotism of the students for their university and promote a general team work among them. It is to be regretted that such meetings cannot be held throughout the year. Among R. O. T. C. students the summer training camps produce similar results and all students who attended the last R. O. T. C. camps upon their return to school, have been stronger supporters of the R. O. T. C. than ever. Most of the students enrolled are enthusiastic about their R. O. T. C. work if they complete two years of it. The leaders among the students enrolled have formed a military fraternity whose purpose is to support the R. O. T. C. in this and other universi-

ties and their co-ordinated efforts have been most helpful to the military department.

As stated before students enrolled in the R. O. T. C. come from many different schools in the university. The requirements for entrance to these schools and the courses taught vary widely. Some of the students now enrolled in the R. O. T. C. have had scarcely any mathematics. These were formerly enrolled in our Infantry unit but since that has now been discontinued they have been taken into the Coast Artillery unit.

This University enrolls new freshman classes in both September and February which forces the Military Department to have just twice as many classes for freshmen as the ordinary universities. Students entering in February attempt to catch up to those who entered the previous September by going to summer school or taking additional subjects during their course.

Beginning this last September students entering the university will hereafter be enrolled for their first two years in the College. After these two years are completed they will enroll in the special school they select, such as the School of Mines, Medicine, Engineering, Law, etc. The junior class entering the Engineering School will have one half of its total members present in school from September until the following August. This period is divided up into four terms, the first running from September to December, the second from January to April, the third from April to June, and the fourth from June to August, while the other schools of the university divide each year into two semesters, the first running from September to February, and the second from February to June. Some of the schools have summer courses also. During each term one half of the junior class of the engineers will be out at work away from the university while the other half of the same class is attending school. At the start of the second term the half of the class which has been out at work comes back to school and those who spent the first term in school go out to work. Each engineering student of the junior class is thus alternately at work for a term and then attending school for a term. At present, two classes, both the Sophomore and the Junior engineers, are alternately working and attending school in this way. The effect of this is to complicate schedules and make a larger number of classes imperative. For this reason more instructor personnel is needed at this University than at others. At present there is just one instructor here who is a coast artilleryman and he is also the P.M.S. and T. and in charge of all three units. Effort has been made all during this year to detail another officer here but due to shortage of funds for travel he has not yet arrived.

Things have thus far been arranged rather satisfactorily in the way of instruction in spite of handicaps and where two classes for students in the Coast Artillery unit had to be scheduled at the same hour they

have been handled by taking up a subject for one of the classes which could be handled by the Motor Transport Corps officer while the other class took a purely Coast Artillery subject with the coast artillery officer in charge.

The crisis has now been reached as two classes which will necessarily have to come at the same period from January on should both be assigned purely Coast Artillery subjects. The Motor Transport Corps officer is not qualified to teach either subject and the one coast artillery officer cannot satisfactorily conduct two classes in different subjects at the same time.

Another feature which tends to add to our schedule difficulties is caused by the fact that all students who were enrolled in the discontinued Infantry unit are now in the Coast Artillery unit. The seniors and juniors among these students have had no prior Coast Artillery training and must have special schedules in order that they may at least cover most of the important Coast Artillery subjects.

One of the most difficult parts of our work here is to convey to both students and faculty the *raison d'etre* of the R. O. T. C., its scope, the subjects embraced by its various units and the extent of theory necessary for the practical performance of the duties of an officer. Various articles have been written on this subject. Articles appear in every school bulletin outlining rather hastily the values of the R. O. T. C., its purposes, etc. Circular letters are sent to students who are to enroll prior to their reporting for enrollment at the university. The work has been explained to student advisers, copies of Secretary of War Weeks' speech to the students at Lehigh University together with outlines of the courses being given by this department have been sent to all the members of the faculty but a still fuller understanding of our work is desired. It is hoped to accomplish this by persistent effort.

This year the Deans of the various university schools have exhibited a greater spirit of interest and helpfulness than in the past and with this help as a foundation we hope to attain a higher standard in our work and it is believed that our efforts should be attended by greater success with our R. O. T. C. units in the future.



The R. O. T. C. at the University of Michigan

By Major Robert Arthur, C. A. C.



THE University of Michigan is the oldest and one of the largest of our state institutions, but its history of military instruction is extremely brief. Organized in 1837, it continued in operation for eighty years before it established a military department. During

that period it grew from a small college offering a limited number of literary and scientific courses to the immense coeducational institution of today, with its eight colleges and schools caring for more than ten thousand students each year.

The College of Literature, Science, and the Arts (1837), the Colleges of Engineering and Architecture (1858), the Medical School (1850), the Law School (1859), the College of Pharmacy (1876), the Homeopathic Medical School (1875), the College of Dental Surgery (1875), and the Graduate School (1892) have, among their alumni, many men who have valiantly served this country in time of war and who have held high military positions, but little of the military training of such men was received on the campus of the University. For a great many years this institution continued to function, following the educational trend of the times, adding new departments, expanding in all directions, and gradually assuming a commanding position among the educational institutions of the country, but at no time was any serious thought given to the necessity for military training.

The outbreak of the World War in 1914 and the sequence of military events in the ensuing years tended to focus attention on the question of military training. Consideration of the subject was brought to a head with the entry of the United States in the World War and a Department of Military Science and Tactics was created in 1917. An Infantry R. O. T. C. unit was established at the opening of the academic year 1917-1918 but, before the R. O. T. C. had had a fair start, it was superseded in 1918 by the S. A. T. C., which, in its turn, was disbanded before it was fairly under way.

The close of the war brought the same reaction to the University of Michigan as elsewhere. Military stock fell below par. Enthusiasm for military training ceased to exist, and the Department of Military Science and Tactics languished and died.

The events of the months following the close of the war showed the fallacy of the general belief in the permanency of peace, and military interest began to revive. The University decided in the spring of 1919 to renew military training, and arrangements were made to organize Coast Artillery and Signal Corps units of the R. O. T. C.

The opening of the academic year 1919-1920 found students reluctant to enroll. The S. A. T. C. was held generally as responsible for the failure of the student body to respond but the reasons went deeper than that. The unfortunate record of the S. A. T. C. with its insufficient corps of experienced instructors, its epidemic of influenza, and its academic conflicts in instructional hours supplemented the general military reaction. Unfortunate military experiences of certain individuals, a wide-spread belief that war had been ended, the pacifistic attitude of many persons, the lack of an academic military past, and the usual indifference of youth, all served to hinder the organization of a mili-

tary department. The officers who were trying to establish their units had the whole-hearted support of the faculty of the College of Engineering, but none of the other Colleges and Schools on the campus had made provision for the enrollment of their students in the R. O. T. C.

From the very start the College of Engineering agreed to grant credits towards graduation for the courses in Military Science in exact accordance with the schedule of the credits employed in other departments. Freshmen were permitted to substitute the first year's work in Military Science for an equal amount of time in shop practice. In subsequent years the substitution was to be made after consultation with the head of the engineering department in which the student was enrolled. The credits for the complete military course amounted to twelve in a required total of 140, or a little more than $8\frac{1}{2}\%$ of the complete engineering course.

By the opening of the second semester in February, the College of Literature, Science, and the Arts had taken action similar to that of the College of Engineering, and allowed, for the military courses, 12 credit-hours from the required total of 120. This action brought in a few new enrollments and the total number of students, which had reached 125 in December, was increased to about 170. All of these students were enrolled in the first or second year of the basic course.

One handicap under which the Military Department labored during the first and second years resulted from action taken by the Board of Regents in 1919 in which it was provided that military instruction should include no military uniforms and no drill formations. This served to make the military courses purely theoretical in character, and the instructional staff, for two years, gave all instruction in the form of recitations or lectures.

Increases in enrollment at the opening of each semester of the academic year 1920-1921 brought the total to more than 300 students and this increase, together with the formation of a purely social organization called "The R. O. T. C. Club," stimulated the interest of the enrolled students and promoted a certain amount of enthusiasm. Reports from the summer camps of 1920 were entirely favorable and it became evident that a material progress had begun.

For the first three semesters of its existence the department had been concerned principally with establishing itself upon the campus. No pressure was brought to bear upon the departments of the University; conflicts in studies were avoided by establishing new classes in the military courses; social duties were not neglected; and opportunities for publicity were utilized.

With the opening of the calendar year 1921 progress became apparent. With the authority of the Board of Regents, a practical program including drills and exercises was laid out and uniforms were adopted. A second officer had joined the Coast Artillery unit and had become

actively engaged in building up a rifle team. The influence of the campus organizations of the Veterans of Foreign Wars and the American Legion was enlisted in our behalf. The "First Annual" Military Ball was a pronounced success. The R. O. T. C. had begun to move.

At the close of the academic year, the Coast Artillery unit had an enrollment of about 180 students, thirty five percent of whom attended the summer camp, with two-thirds of the contingent attending the basic camp and one-third the advanced camp. The rifle team of the Coast Artillery unit successfully defeated the other teams at the camp and later attended the National Matches where it won first place in the R. O. T. C. Team Match and seventh place in the National Intercollegiate Match. Members of the R. O. T. C. Team and other R. O. T. C. students also fired on the Michigan State Civilian Team which took fifteenth place on the National Match.

The events of the past Spring and Summer are having their influence in promoting the R. O. T. C. The addition of Infantry and Ordnance units offers the student a greater range of choice and does not seem to cut materially into the enrollments in the other units. It must be admitted that the enrollment is not large when compared to the size of the two colleges, that there is still a manifest reluctance on the part of many students when enrollment is suggested, and that the semester by semester loss is large. On the other hand, practically every member of the R. O. T. C. is seriously interested and intends to continue the course, practically all students completing the basic course enroll for the advanced course, and practically every graduate accepts a commission. Nineteen percent of the present Coast Artillery advanced course have already attended two camps and another twenty-five percent have attended a basic camp.

With more than fifty percent of the R. O. T. C. students enrolled in the Coast Artillery unit, it may be safely claimed that the Coast Artillery is solidly established, but the work of organization is far from being completed. The present rate of enrollment indicates an ultimate maximum of 325 in the Coast Artillery unit when all four years are fully represented. Being but five or six percent of the campus strength, this figure should be materially increased before it can be considered fully satisfactory. Space for administrative work, space for storage, and space for demonstrations and problems must be obtained. The present facilities of the University are entirely inadequate for the demands made upon them and the Department of Military Science and Tactics is housed in a frame shed built for the S. A. T. C.

The difficulties which will continue to confront the Professor of Military Science and Tactics and the heads of the several units are probably common to all large institutions without compulsory military training, and result mainly from the freshman's confusion at the moment of entering the University and from the impracticability of

avoiding conflicts between the instructional hours of the Military Department and those of other Departments.

However, the enthusiasm displayed by the enrolled students, the steady growth of the units, and the increasing prestige of the Department indicate that the R. O. T. C. at the University of Michigan is becoming an integral part of the institution and, if progress here may be taken as a criterion of the situation as a whole, we may begin to feel that the R. O. T. C., in its essential outline, is on the highway to success.



The R. O. T. C. at Massachusetts Institute of Technology

By Major Edward W. Putney, C. A. C.



THE Massachusetts Institute of Technology was founded in 1861. From 1865 until 1917 one year of Military Science was required of all physically fit male students who were citizens of the United States.

In 1917 the Institute Authorities voted to change the requirements to two years of military science.

The Coast Artillery Unit was established December 19, 1917. At present there are the following Units:

UNIT	ESTABLISHED
Coast Artillery	December 19, 1917
Signal Corps	December 19, 1917
Ordnance	October 4, 1919
Engineer	November 6, 1919
Air Service	November 4, 1920

ENROLLMENT IN ADVANCED COURSES

UNIT	1919		1920		1921	
	Junior	Senior	Junior	Senior	Junior	Senior
Coast Artillery.	25	none	37	25	75	36
Signal Corps.	none	none	13	none	31	9
Ordnance.	24	none	35	24	45	38
Engineers.	3	none	51	3	62	51
Air Service.	none	none	none	none	24	4

Military Science for three hours per week during Freshmen and Sophomore years is required of all male students, physically fit and who are citizens of the United States.

The Academic year consists of three terms of ten weeks each. The same instruction is given all men in the basic course to include the fourth week of the last term of the Sophomore year. For the last six weeks of the Sophomore year those students who are eligible for and who decide to enroll in the Air Service or Signal Corps Units are given special instruction apart from the remainder of the Sophomore class.

The distribution of the Freshmen and Sophomores to the various units is but a paper distribution. At the end of his sophomore year a student may enroll for the advanced course in any unit for which he is eligible, as determined by the Institute Course that he is pursuing.

The subjects of instruction of basic course and periods of time devoted to them are shown below:

FIRST TERM:

FRESHMEN YEAR

1-2-3-4 and 5th weeks Infantry Drill. (School of the Soldier, Squad, Platoon and Company.)
 6th and 7th weeks Military Courtesy and Discipline.
 8-9 and 10th weeks Hygiene, Sanitation and First Aid.

SECOND TERM:

11 and 12th weeks Organization, Administration and Supply.
 13-14-15 and 16th weeks Military Law and Rules of Land Warfare.
 17 and 18th weeks Manual of Interior Guard Duty.
 19 and 20th weeks. Signal Communications for all Arms.

THIRD TERM:

21-22-23-24-25-26-27-28-29 and 30th weeks Infantry Drill. (School of the Company, Ceremonies and duties of Officers and N. C. O's. Freshmen rotating in the various positions.)

Uniform is worn by students only on drill days, during the first five and the last ten weeks of the Freshmen year.

SOPHOMORE YEAR

FIRST TERM:

1-2-3-4 and 5th weeks Small Arms; care, operation and use.
 6-7-8-9 and 10th weeks Minor Tactics.

SECOND TERM:

11-12-13-14-15 and 16th weeks Field Engineering.
 17-18-19 and 20th weeks Military History and Policy of the United States.

THIRD TERM:

21-22-23 and 24th weeks Map Reading and Sketching.
 25-26-27-28-29 and 30th weeks (All Sophomores except Air Service and Signal Corps.) Coast Art'y Materiel. (Guns, Mortars, and Howitzers, and their carriages and Motor Transportation.)

A great part of the instruction given in the Basic Course is by lectures. For example: In Minor Tactics there were three different lectures per week, each one of these three lectures being given four times. The average attendance was about 125 men.

The enrollment at the Institute is as follows:

696 Freshmen

697 Sophomores

840 Juniors

922 Seniors

284 Graduate students, Army and Navy officers and Co-eds.

Between 1% and 2% of the students are Co-eds.

The following courses are offered:

- COURSE I Civil Engineering
 Option 1 Hydraulic Engineering
 Option 2 Transportation Engineering
 Option 3 Hydro-electric Engineering
- COURSE II Mechanical Engineering
- COURSE III Mining Engineering and Metallurgy
 Option 1 Mining Engineering
 Option 2 Metallurgy
 Option 3 Geology
- COURSE IV Architecture
 Option 1 General Architecture
 Option 2 Architectural Engineering
- COURSE V Chemistry
- COURSE VI Electrical Engineering
- COURSE VI-A Co-operative Course in Electrical Engineering
- COURSE VII Biology and Public Health
 Option 1 Public Health
 Option 2 Industrial Biology
- COURSE VIII Physics
- COURSE IX-A General Science
- COURSE IX-B General Engineering
- COURSE X Chemical Engineering
- COURSE X-A Chemical Engineering Practice (Graduate)
- COURSE X-B Chemical Engineering Practice (Undergraduate)
- COURSE XI Sanitary Engineering
- COURSE XII Geology and Geological Engineering
- COURSE XIII Naval Architecture and Marine Engineering
- COURSE XIII-A Naval Construction
- COURSE XIV Electrochemical Engineering
- COURSE XV Engineering Administration
 Option 1 Civil Engineering
 Option 2 Mechanical and Electrical Engineering
 Option 3 Chemical Engineering

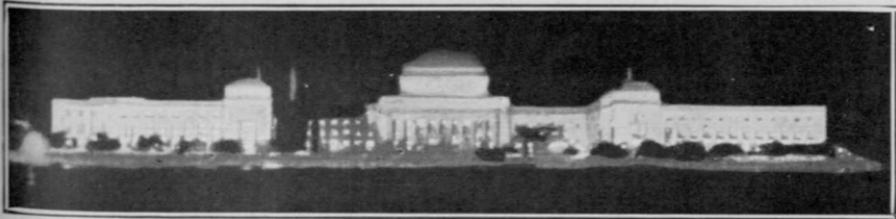
Dormitory space is limited. Students find accommodations where they can. The Institute is located in Cambridge, Mass., on the bank of the Charles River Basin, just opposite the Back Bay district of Boston.

Students commute from distances as great as forty miles.

The attitude of the faculty and students toward Military Science is very friendly and improving. All necessary offices, lecture rooms, etc., are provided by the Institute authorities.

Figures indicate that about 50% of the students who were Sophomores last year are now enrolled in one of the Units for the Advanced Course, and that 16% (of the Sophomores of last year, 32% of the Juniors enrolled in the Advanced Courses,) are enrolled in the Coast Artillery Unit, Advanced Course.

However some of the men who were Sophomores here last year and who are eligible for enrollment in the Advanced Course, find it impossible to enroll because of summer work that they must take at the Institute.



Cop. L. M. Long

NIGHT VIEW OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY ILLUMINATED BY A 35-IN. C. A. SEARCHLIGHT

For similar reasons other men while apparently eligible actually cannot enroll. It is our opinion that nearly 75% of those Juniors who are eligible for the Advanced Courses and who can take them are at present enrolled.

The Advanced Course for the Coast Artillery Unit includes the following subjects:

JUNIOR YEAR

- 1st Term: Orientation (Largely Field Work.)
- 2nd Term: Gunnery (Principles of Exterior Ballistics and Determination of Initial Firing Data.)
- 3rd Term: Coast Artillery Materiel. (Fire Control Materiel and Ammunition.)

SENIOR YEAR

- 1st Term: Ordnance and Gunnery (Selected portion of Tschappat's Ordnance and Gunnery.)
- 2nd Term: Gunnery (The observation and adjustment of fire. Problems on the Puff Board.)
- 3rd Term: Employment of Artillery. (Tactical Principles and Illustrated Problems.)

The following Coast Artillery Officers are on duty here at present:

Colonel J. B. Christian, C.A.C. (DOL) Prof. of Mil. Sci. and Tactics.
Major E. W. Putney, C.A.C., (DOL) Asst. Prof. of Mil. Sci. and Tactics.

Major P. H. Ottosen, C.A.C., (DOL) Asst. Prof. of Mil. Sci. and Tactics.

Major R. T. Pendleton, C.A.C., (DOL) Asst. Prof. of Mil. Sci. and Tactics.

There are 4 Coast Artillery Non-commissioned Officers and one Private First Class on duty here.

Also there are on duty here:

1 Major Air Service.

1 Major Ordnance (1/3 of his time.)

1 Captain Air Service.

1 Captain Corps of Engineers.

1 Captain Signal Corps.

1 1st Lieut. Corps of Engineers.

2 Non-commissioned Officers DEML (From S. C.)

Note that there are 1392 students enrolled for instruction in Military Science as follows:

UNIT	BASIC		ADVANCED		TOTAL Enrollment
	Fresh 1st yr.	Soph. 2nd yr.	Junior 1st yr.	Senior 2nd yr.	
Coast Artillery.	150	138	75	36	399
Engineers.	152	142	62	51	407
Ordnance.	94	87	45	38	264
Signal Corps.	60	54	31	9	154
Air Service.	73	67	24	4	168
Totals.	529	488	237	138	1392

In January, 1922, a class of approximately 200 Junior Freshmen will enter the Institute and they will require instruction in the Summer of 1922.

We believe that the best way to increase enrollment in the advanced courses is to make the Advanced Courses interesting and worth while to the men already enrolled.

As a part of his instruction in the Military Policy of the United States, each Sophomore is instructed as to the organization and object of the R. O. T. C.; as to the advantages offered him by enrollment in one of the Advanced Courses: as to the requirements of the Advanced Course, and as to just which of the Advanced Courses he will be eligible for at the beginning of his Junior Year. He is further instructed as to the functions of the various branches of the service, and is advised to join the unit of that branch in which he would want to find himself placed in case of war.

The R. O. T. C. at the Georgia School of Technology

By Major Andrew L. Pendleton, Jr., C. A. C.

 It is true that in 1917 two units of the R. O. T. C., Infantry and Coast Artillery, were authorized for the Georgia School of Technology. The former was organized and conducted by a Sergeant Blake. The latter was not started until after the war. Before anything much had been accomplished with the Infantry unit, the R. O. T. C. was replaced by the S. A. T. C. Therefore we may say that the history of the Tech R. O. T. C. dates from January 1919 when the demobilization of the S. A. T. C. was accomplished. The faculty voted unanimously to revive the R. O. T. C. The student body voted to the contrary, and, at a mass meeting, appointed a committee to wait upon the president to inform him of its decision. Instead of receiving the committee, the president hurriedly called a meeting of the faculty. The result was that the student body was given to understand that there was no room on the campus for any man who objected to two years' of military training. The action was as effective as it was prompt and determined: not a student withdrew.

There is no better evidence of the faculty's action and the loyalty and the spirit of the student body than the fact that in the short space of two years Tech went from "mutiny" to Distinguished College. Convincing evidence of the growing popularity of the Tech R. O. T. C. may be found in the following figures:

SCHOOL YEAR	BASIC COURSE	ADVANCED COURSE	TOTAL ENROLLMENT	TOTAL ELIGIBLE
1919-1920	700	70	770	1300
1920-1921	780	270	1050	1400
1921-1922	900	400	1300	1500

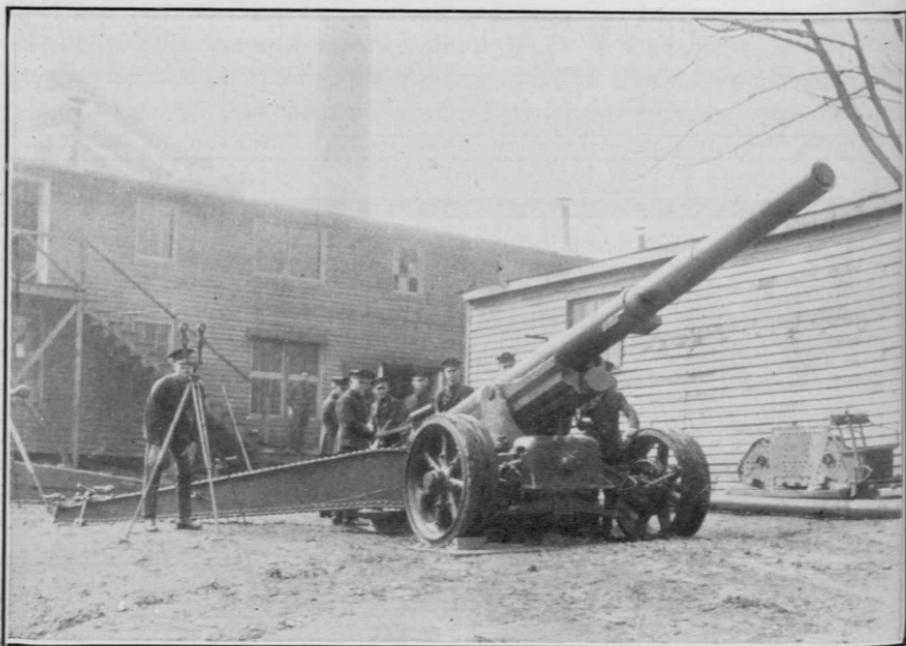
There are six units of the R. O. T. C. established and in operation at Tech, namely, Infantry, Coast Artillery, Signal Corps, Air Service, Motor Transport and Ordnance. The following personnel is assigned for duty with these units:

Major A. L. Pendleton, Jr., C. A. C.	P. M. S.T. and Commandant
Major W. C. Washington, C.A.C.	Capt. J.L.Autrey, S.C.
Major T.H.Monroe, Inf.	Capt. H.D.Gibson, Inf.
Major R.T.Gibson, C.A.C.	Capt. F.C.Shaffer, Ord.
Capt. L.E. Goodier, Jr., Ret.,(A.S.)	1st Lt. E.F. Shriver, Q.M.C.(MTC)
Capt. P.T. Fry, Inf.	1st Lt. J. M. Heath, S.C.
1st Lt. R.R. Coursey, Inf.	Sgt. R.W.Slayden, C.A.C.

Mr. Sgt. A. C. Bellamy, Inf.
 Tech. Sgt. Thomas Brass, S.C.
 Tech. Sgt. Leo Laier, Inf.
 1st Sgt. T.T.Jones, C.A.C.
 Sgt. F.C.Abbot, S.C.

Sgt. Jos.Hruska, C.A.C.
 Sgt. W.H.Godbee, Inf.
 Sgt. W.T.Mealor, M.T.C.
 Pvt. 1cl. R.M.McMillan, M.T.C.

Freshmen and Sophomores who are physically fit are required to devote five hours a week to the R. O. T. C. training. Completion of the basic course is a prerequisite to graduation. Juniors and Seniors who elect the advanced course are scheduled for an equivalent of seven and one half hours per week, five hours class-room and two and one half hours for laboratory or preparation



155-MM. GUN—GEORGIA SCHOOL OF TECHNOLOGY

The Military Department enjoys the same status and recognition as the other departments. The R. O. T. C. instruction is conducted on the same basis as is instruction in the engineering departments. The hours for drill and instruction are staggered thruout the day from eight A.M. to five P.M. The different classes, Freshmen, Sophomores, Juniors and Seniors, report at entirely different periods, except that on Wednesday afternoons at 4:00 o'clock all classes report for review, parade or other regimental ceremony. The units are organized into a provisional Infantry regiment of four battalions (3 companies each) and a band of sixty pieces.

Each of the six units has its own laboratory and class-rooms adequately equipped for both practical and theoretical instruction. In

addition to the headquarters' offices, there is a separate office for each unit commander and his assistants.

Each of the engineering departments has scheduled certain subjects for which Military Science and Tactics is elective. By this scheme military instruction is fitted into and not superimposed upon a student's schedule: it is not a burden. It is further a fact that the heads of the engineering departments are interested in the R. O. T. C., especially in the military courses which have or bear some relation to their engineering courses. This interest, for example, extends so far that the subject of Communication Engineering which is about 75% of the Junior and Senior Signal Corps course is taught entirely by the instructors of the



TRENCH MORTAR INSTRUCTION AT GEORGIA SCHOOL OF TECHNOLOGY

Electrical Engineering department. The other departments are gradually introducing into their regular courses problems supplied by the Military Department and which have both a military and engineering value.

The prime prerequisite of a successful R. O. T. C. is the determination of the institution officials to have it and to support it. The members of the board of trustees, the president, the faculty and the students want it at Tech. Although Tech is by no means a wealthy school, the R. O. T. C. is never refused funds required for the construction of gun sheds, rifle ranges, garages, the purchase of class-room equipment, books for the library, stationery, gasoline, oils, etc. The second prerequisite to a successful R. O. T. C. is that it must be made attractive to the student.

Military drill and instruction while means to the desired ends and purposes of the R. O. T. C. cannot and never will alone make the R. O. T. C. popular. They must be supplemented and encouraged by R. O. T. C. social and athletic activities which may bring the students rewards in pleasure, entertainment and prizes.

We have established the Tech R. O. T. C. Exchange in which are sold shoes, shirts, blouses, breeches, ties, socks, overcoats, etc. The stock will soon be enlarged to include various other commodities. While only a small profit is charged we expect to make between three and four thousand dollars clear profit this year all of which will go for the pleasure and entertainment of the members of the R. O. T. C. and the Tech R. O. T. C. Chaperones and Sponsors. Approximately twelve hundred dollars will be used for cash prizes and medals to be awarded for excellence in military and athletic activities. One hundred dollars will be awarded as a first prize to the student winning the military essay contest. The sponsor who accomplishes the most for her organization during the year will receive a present which will cost not less than one hundred dollars. The cash prizes will total about a thousand dollars and are inspiring keen competition. Each company is after the hundred dollar prize for winning the largest number of points during the year and a similar prize for winning the company drill competition.

THE COAST ARTILLERY UNIT

The Tech Coast Artillery unit has an enrollment of 266 divided as follows:

Freshmen	Sophomores	Juniors	Seniors
99	62	60	45

The unit is very popular especially on account of the attractiveness of the summer camps held at Fort Monroe. The location of a summer camp influences enrollment where there are two or more units at an institution. The officers in charge of this unit have established a complete fire control system with its base end stations and plotting room. In connection with this system a compressed air gun which fires a solid rubber ball about $1\frac{1}{2}$ inches in diameter and which has a maximum range of approximately 500 yards is used. The air for the gun is gotten either from the power plant or the air tank on the light artillery repair truck. It is the intention to fix the air gun in the bore of the 8-inch Howitzer, and as soon as this is done a moving target will be tracked and fired at. Data are now being collected for the preparation of range tables for the gun.



The R. O. T. C. at the University of Minnesota

By Major Laurence T. Walker, C. A. C.

THE University of Minnesota is a State University and was chartered in 1859. It possesses the distinction, unusual even for such a young institution, of having all its ex-Presidents still living and interested in its affairs. The University at the present time consists of a group of institutions, somewhat decentralized as regards administration, including a College of Science, Literature and Arts, a College of Engineering and Architecture, a School of Chemistry, a College of Agriculture, Forestry and Home Economics, a Law School, a Medical School, a College of Dentistry, a School of Mines, a College of Pharmacy, a College of Education, a Graduate School, and a School of Business. All colleges and schools are coeducational. The registration of the University at the beginning of the present quarter included 5207 male students and 2160 women. As at most large State Universities the number of students present fluctuates between wide limits through the year. This variation is increased by the arrangement that permits students to enter the University at the beginning of any one of the three quarters, into which the college year is divided. The buildings of the University are located close to the east bank of the Mississippi between Minneapolis and St. Paul, within the city limits of the former and not far from its business center.

The aspect of the University in which we are most interested—the development and operation of its Military Department—can best be indicated by quoting from a recent report of the Professor of Military Science and Tactics which reads as follows:

“For nearly a score of years after the foundation of the University in 1852, there was apparently no attempt towards military training, the first record being found in the report of the Board of Regents in 1869, which contains the statement that—

“In connection with the agricultural and scientific courses, facilities for instruction in drill and military tactics have been provided, and Professor R. W. Johnson, Major General, U. S. A. has been secured to take charge of the department. He has already entered upon his duties and there is now opportunity for all students to avail themselves of the culture and discipline given in this direction.

“The State has generously furnished a complete outfit of arms and equipment and cannon for the use of the department. General Johnson has already made arrangements so that all the young men who desire it may obtain a neat uniform at a price somewhat less than that of ordinary clothing.”

“In this year, the students were organized into a battalion of two companies, but it was not yet decided whether drill and the wearing of uniforms would or would not be compulsory.

"The year 1870 was reported to be a very successful one under General Johnson. "Military exercises" were made obligatory for all male students unless excused by the faculty, with the provision that only those who declared their intention of completing a course of study were entitled to wear the uniform of the military corps. The schedule of instruction was divided into two sub-heads: (a) Military Studies, which included military engineering, the art of war and military law; (b) Military Exercises, which included Infantry tactics, Artillery tactics and Cavalry tactics. The students were organized into a battalion of four companies which was drilled every day.

"In the following year, General Johnson was retired and military training was suspended. 1st Lieutenant Ely L. Huggins was detailed in the latter part of the year 1872, but military instruction was not resumed until 1873 and then it was confined only to the fine season, as there were no facilities for indoor drill and therefore none during the winter months. The students were organized into three companies.

"In the following year, in which Lieutenant Huggins was relieved, it was recommended that military science be abolished unless a suitable drill hall could be built. 1st Lieutenant John A. Lundeen was detailed at the close of the year 1876, but military training was not re-established until 1877, when it was resumed under this officer and continued through the following year. Two years then elapsed during which time there appears to have been no officer on duty at the University and no record of military instruction.

"In the Fall of 1881, Captain Edgar C. Bowen, U. S. A. Retired, was hired by the University as Registrar and Professor of Military Science, and remained on duty in this capacity until March 1884, when he resigned.

"On July 2, 1862, the Morrill Act became a law, from which time military instruction was to have Federal supervision.

"No record is found of any further military training until we come to the biannual report of 1887-88, when, as considered the requirement of the "Agricultural Land Grant," a drill hall was built. Military instruction was carried on under Lieutenant Edwin F. Glenn, U. S. Infantry. Lieut. Glenn remained in charge of this instruction until 1892 and the military training during the two years 1890-91 was reported very successful for "boys and girls." During this period, drill and study of military science came to constitute a part of the curriculum for the Freshman year. Lieut. Glenn was succeeded by Lieutenant George H. Morgan in 1892 as Professor of Military Science and Tactics, who, in turn, was superseded by Lieut. Harry A. Leonhauser. During the period 1893-94, the drill hall was lost by fire and military instruction suspended. The present armory was built in 1896 at a cost of \$75,000.

"During the college year 1901-02, while military instruction was under the direction of Haydn S. Cole, U. S. A., two full years of military instruction were required by both military and agricultural students and it is further provided that members of the advanced classes could volunteer for this instruction. At the end of this period, two cadet captains were commissioned in the regular army by President Roosevelt.

"During the college year 1903-04, the students were organized into a regiment of 800 cadets. From 1909-1911, under Major Edmund L. Butts, there were nine companies of Infantry, one battery Field Artillery, bugle corps and band at the University proper; six companies and band at the Farm School; and two companies at the Agricultural College.

"Between the years 1911-15, students in Mines, Dentistry and Pharmacy were required to join the cadet corps. In this latter year, the entire cadet corps of 1200 cadets spent a week in camp at Fort Snelling.

"By an Act of June, 1916, the R. O. T. C. was established under Major George W. Moses and from this time on, the military instructor staff became materially increased. During the college year 1916-17, there were four officers and five sergeants in the Department of Military Science and Tactics, which was operated under General Orders No. 49, War Department 1916. The R. O. T. C. establishment continued until the Fall of 1918. In August, 1918, the War Department decided to mobilize every element of strength in the nation for war purposes and as a part of this general policy, decided to utilize the equipment and staff of every reputable college and university for the training of soldiers in accordance with which the R. O. T. C. was temporarily superseded by the Students' Army Training Corps. Every student over



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18 years of age was to be an actual soldier in the United States Army, and receive \$30.00 per month as pay. He was to live under strict military discipline in barracks; his uniform, housing and subsistence were to be paid for by the Government. He was to pursue a combined military and academic course prescribed by the War Department through its Committee on Education and Special Training.

"On September 2nd, the Regents approved the establishment of the S. A. T. C. On September 4th, a contract was drawn up with the War Department at the rate of \$1.45 per day per man, which provided 45 cents per day for instruction and \$1.00 per day for housing and subsistence. The Exposition Building was rented for barracks at the rate of \$1250.00 a month. The next day, the Maxwell Building was obtained at \$1700.00 a month, and certain fraternity houses were taken over for various purposes, including headquarters for the officers and hospitals. A naval section of the S. A. T. C. was established on October 12th. Finally, the signing of the Armistice changed the spirit of the country and the S. A. T. C. was demobilized on December 21 at the close of the Fall quarter. During the period of the S. A. T. C. instruction, students

were organized into two regiments. There were fifty officers on duty. None of these were officers of the regular establishment; neither were there any regular non-commissioned officers as instructors.

"This gigantic experiment of the S. A. T. C., although it apparently received the heartiest cooperation from everyone connected with the University, was not a success, or, at least, was far from satisfactory. The program of work was too heavy for the average student, being a combination of a heavy academic schedule with eleven hours per week of drill. From the University viewpoint of scholarship, it was probably an unqualified failure. From the viewpoint of military instruction, from all I can learn by inquiry, the discipline was poor, the instruction indifferent and the instructors not properly fitted for their responsibilities.

"On January 24, 1919, the Board of Regents authorized the establishment again of the R. O. T. C. which was speedily re-organized on its former basis, and the direction of the unit during this college year was under Colonel F. H. Burton, Inf., who had a staff of three officers and six non-commissioned officers. During the latter part of this year, the War Department had proposed to the University the organization of various units of the R. O. T. C. including Field Artillery, Coast Artillery, Signal Corps, Motor Transport Corps and Ordnance Department. After careful deliberation and conference, the Board of Regents voted, on April 22, 1919, to accept, tentatively, pending the revision of General Orders No. 49, a unit of the Coast (Heavy) Artillery and a unit of the Signal Corps in addition to the regular Infantry work. During the college year 1919-20, the R. O. T. C. establishment continued under the direction of Lieut. Colonel Albert G. Goodwyn, Inf., there being on duty at the University with the Infantry unit, three officers and seven non-commissioned officers; with the Coast Artillery unit, two officers and five non-commissioned officers; with the Signal Corps Unit, one Master Signal Electrician. The student body for this instruction was organized into two regiments of two war strength battalions.

"In February, 1920, a Medical and a Dental unit were added to those already mentioned.

"There are no local records indicating the scope and nature of the instruction as actually given prior to the re-establishment of the R. O. T. C. in January 1919. Since that date, the instruction has been carried on in accordance with Special Regulations No. 44, 1919, pursuant to general programs furnished by the War Department, the actual details of this instruction being shown on the schedules for each class and unit which were forwarded at the proper time to the War Department, to the Central Department and to Headquarters, 7th Corps Area."

As indicated above, the Coast Artillery Unit dates from the Spring of 1919, when Lieutenant Colonel West C. Jacobs, C. A. C., reported for duty. Owing to the proximity of the end of the college year, nothing was accomplished during the remainder of that quarter and as Lieut. Col. Jacobs tendered his resignation as an officer of the Army before the beginning of the next quarter, the real start of the unit was postponed until the arrival of the present senior Coast Artillery officer in October, 1919. At this time, the Military Department had not yet recovered from the conditions of the S. A. T. C. period and it was necessary for all officers to devote their attention to the establishment and

consolidation of the R. O. T. C. as a whole rather than to perfecting the details of their respective specialties for the remainder of that college year. However, a beginning was made by instructing certain groups of Sophomores in the subject of Artillery Materiel and by drawing up tentative plans for the next year. Thirty-eight students attended the R. O. T. C. camp at Fort Monroe in the summer of 1920.

During the first quarter of the college year 1920-21, the Unit took definite form for the first time, being composed of two groups of Freshmen and of two groups of those Sophomores who had attended the Camp or who were otherwise qualified to handle the work. During this quarter a four-year program of instructions was prepared in detail covering the general requirements of the directions of the Chief of Coast Artillery,



THE MISSISSIPPI RIVER AT THE UNIVERSITY OF MINNESOTA

and was put into effect. At the beginning of the Winter Quarter in January, 1921, the method of voluntary enrollment, conditional on qualification, was first put into effect and the Unit became definitely established in its present form. Shortage of War Department funds restricted attendance at the Summer Camp of 1921 and we sent to Fort Scott only forty-six students from the Basic Course. Fourteen Advanced Course students attended this camp, making a total of sixty. At the present time the strength of the unit is as follows:

First Year	138
Second Year	81
Third Year	24
Fourth Year	4

That is, next year will see four reserve officers of Coast Artillery produced from this Unit; the following year upwards of twenty. After

that, it is estimated that about twenty-five men per year can be graduated from the Unit. The strength of the Basic Course, as is the case in all institutions where enrollment is compulsory, is, of course, no indication of the probable strength of the next year's Advanced Course.

The organization for instruction is as follows: The Basic Course being compulsory, every Freshman in the University (unless specifically excused) is required to register for military instruction during the 2d, 4th, 5th, 6th or 8th hour on Mondays, Wednesdays and Fridays of the Fall and Winter Quarters. Sophomores register similarly in the 1st, 3d and 7th hours of the same days. This gives five Freshmen sections meeting three times a week and three Sophomore sections meeting three times a week. The Freshmen sections meeting the 2d, 4th and 6th hours are divided into sub-sections all of which belong to the Infantry Unit; those meeting on the 5th and 8th hours are divided into sub-sections likewise, but some of these belong to the Infantry, some to the Coast Artillery and some to the Signal Corps. The Sophomore section meeting the 3d hour consists entirely of Infantry sub-sections; the sections meeting the 1st and 7th hours are divided into sub-sections of the different branches of the service. This method of organization allows instruction to be given to all branches in common or separately, according to its nature, and also gives a flexibility which is indispensable under local conditions. During the Spring quarter, the outdoor work is concentrated as much as possible and the entire Basic Course enrollment, Freshmen and Sophomores, meet for a single three-hour period each week. (This is the plan: practically it may be necessary to use two three-hour periods in order to accommodate everybody.) This permits the membership of the different Units to be organized into tactical units and makes it possible to have Sophomores act as Cadet officers and non-commissioned officers. It will be noted that at this University, military work is restricted to the minimum statutory requirements as to time. The Advanced Course for all units is a matter of class room or field instruction and presents no features of special interest. Instruction in common subjects is given to members of all units in common. Instruction in the Basic Course is given in the form of lectures, demonstrations, recitations, and practical drill. The Advanced Course students are assigned lessons from the text books provided and the course is handled in general like any other college course.

The lack of facilities is the most serious obstacle to the complete success of the R. O. T. C. at this University. The University is far behind requirements in its building program and all departments are feeling the pinch. The Military Department is restricted to a small Armory of obsolete type which also houses the Department of Physical Education and in addition serves as the only auditorium possessed by the University. We have been helped a good deal by the courtesy of the Deans of various Colleges in allowing us the use of class rooms

and amphitheatres. It is hoped that the situation as regards space will improve in the near future. It is extremely unsatisfactory at present.

Leaving out of account those few whose views might be considered extreme in any respect, the general attitude of the faculty might fairly be described as watchful waiting. There is a general appreciation of the necessity for some scheme that will insure adequate military preparedness without disproportionate cost and of the fact that the R. O. T. C. project seems to promise this. But they have not forgotten the S. A. T. C., and the R. O. T. C. cannot demand unqualified indorsement until it has demonstrated its ability to "deliver the goods," and, unfortunately, they cannot be properly "delivered" until there is greater assistance by the State authorities in increasing the facilities for thorough instruction. In other words, it is up to us to show that our activity is worthy of respect and support. It would be superfluous to describe the attitude of students in a State University toward compulsory military training. It is worthy of note, however, that there has been a very striking change in attitude at this University since last Spring. At the present time, the respect for and interest in military work by these students may be described as excellent beyond the most optimistic expectations that could have been based on past experience.

In conclusion, it should be stated that the Unit at this University has developed slowly but steadily and is now past the experimental stage. Only some obstacle now wholly unforeseen can prevent its becoming an efficient source of supply for reserve officers, and a credit to the Corps.



The R. O. T. C. at the University of Alabama

By Major Edward P. Noyes, C. A. C.

GENERAL HISTORY

THE University of Alabama was called into existence by the generosity of the Congress of the United States, and fostered by the founders of the state.

The constitutional convention which met at Huntsville, Alabama Territory, on July 5, 1819, adopted the following article:

"Schools and the means of education shall forever be encouraged in this state. * * * The general assembly shall take like measures for the improvement of such lands as have been or may be hereafter granted by the United States to this state for the support of a seminary of learning, and the moneys which may be raised from such lands by rent,

lease, or sale, or from any other quarter, for the purpose aforesaid, shall be and remain a fund for the exclusive support of a state university, for the promotion of the arts, literature, and the sciences; and it shall be the duty of the general assembly, as early as may be, to provide effectual means for the improvement and permanent security of the funds and endowments of such institutions."

In 1819, the Congress of the United States donated seventy-two sections, or 46,080 acres, of land within the state for the endowment of a seminary of learning. At the second session of the general assembly, an act was passed, December 18, 1820, establishing a seminary of learning "to be denominated the University of Alabama."

At the third session of the general assembly, on December 13, 1821, an act was passed providing that "his excellency, the governor, ex-officio, together with twelve trustees, two from each judicial circuit, to be



ORIENTATION CLASS—UNIVERSITY OF ALABAMA

elected by joint ballot of both houses of the general assembly, to continue in office for a term of three years," shall constitute a body politic and corporate in deed and in law, by the name of "The Trustees of the University of Alabama," and that the governor should be ex-officio president of the board. The first meeting of the board of trustees was held at the town of Tuscaloosa on April 6, 1822. On December 29, 1827, the general assembly, by joint ballot of both houses, selected Tuscaloosa as the seat of the University. The site whereon to erect the buildings, one mile and a quarter east of the court house in Tuscaloosa, was selected by the trustees on March 22, 1828. On April 12, 1831, the University was opened for the admission of students. The first commencement was held on August 9, 1832, one student being graduated. On April 4, 1865, a body of federal cavalry set fire to and completely destroyed all the public buildings of the University, except the astronomical observatory. The erection of new buildings was begun in January, 1867, and collegiate instruction was resumed in April, 1869.

A second donation of public lands within the state, to the extent of seventy-two sections, or 46,080 acres, was made to the University by the Congress of the United States by the Act of February 25, 1884, in

restitution of the loss in buildings, library, and scientific apparatus incurred in 1865.

On March 6, 1907, the legislature of Alabama increased the material equipment of the University by voting the sum of four hundred thousand dollars to be used as a fund for the erection of new buildings during the years of 1907-1910.

The legislature in 1911 appropriated one hundred thousand dollars for buildings and increased the maintenance fund. In 1919, it appropriated one hundred and fifteen thousand dollars for buildings and increased the annual support of the University, including the School of Medicine, the summer school, and extension service to an amount varying from one hundred and twenty one thousand dollars in 1919-1920 to one hundred and sixty five thousand, five hundred dollars in 1922-1923.

The University also has an endowment fund which is being gradually increased out of royalties arising from leases of coal mines.

ORGANIZATION

The University is a part of the public school system maintained by the state of Alabama. It is co-educational and has been for a great number of years. It is not a land grant institution.

It is administered through the following organizations:

1. The College of Arts and Sciences.
2. The School of Education.
3. The College of Engineering.
4. The School of Law.
5. The School of Commerce and Business Administration.
6. The School of Medicine.
7. The Summer School for Teachers.
8. The Department of Military Science and Tactics.

GROUNDS AND BUILDINGS

The University grounds, adjacent to the city of Tuscaloosa, comprise nearly three hundred acres, lying north and south of University avenue. Near the middle of this tract is the campus, proper, consisting of about forty acres. Here are the twelve large University buildings which furnish the administration offices, class rooms, library, shops, etc., and dormitories for a large number of the students. In addition there is a fine athletic field.

MILITARY HISTORY

The first Military department was established in the University by an Act of February 23, 1860. Captain Caleb Huse, U. S. Army, was detailed by the Secretary of War to introduce the new system and was appointed by the Board of Trustees, Commandant of Cadets. The next year Alabama seceded from the Union, but the Military Depart-

ment, as well as the academic, continued to function during the war, and trained many officers and soldiers for the Confederate army. Military training was retained in the University, from its re-opening in 1869 until 1903. Some time prior to the latter date a sentiment of opposition to it began and continued to grow until it finally resulted in an open demonstration against it. This resulted in its abolishment. It was not resumed until 1916, when, under the Act of that year, a senior division of the Reserve Officers Training Corps was established, the unit authorized being Infantry. This remained in effect until the fall of 1918, when the Students' Army Training Corps was established. The R. O. T. C. was resumed in January 1919, and during the spring of that year a Coast Artillery Unit and an Engineer Unit were authorized, in addition to the Infantry Unit already established. The Engineer and C. A. units were organized and started in September, 1919.

Military training is now compulsory for all male members of the freshmen and sophomore classes, except law students. It is voluntary for all male members of the junior and senior classes. Exemptions are granted for physical disability and for former service in the U. S. Army, Navy or Marine Corps, if of sufficient duration. Exemption or credits for entering the advanced course are allowed for two years training in any senior R. O. T. C. unit, including S. A. T. C. However, a student must be a full academic junior in good standing, before he is allowed to enroll in the advanced course.

One semester hour of academic credit is allowed for students taking the basic course and two semester hours for those taking the advanced course. This is out of a total of eighteen to twenty semester hours.

Uniforms are now issued in kind. Application has been made for commutation of uniforms, as it is believed that the morale of the unit will be greatly improved by issuing a neat, comfortable and well fitting uniform in place of the army uniform, the shape and design of which is not well suited to the needs of college students.

The honor system is in effect in all departments, including the military department. However, purely military offenses are punished by extra drills on Saturday afternoons. All unexcused absences are required to be made up two hours for one. Excused absences, except those due to illness or other unavoidable causes, are also required to be made up on Saturday afternoons, hour for hour. Other excused absences are permitted but not required to be made up.

R. O. T. C. ENROLLMENT ON NOVEMBER 15, 1921

	Freshmen	Sophomores	Juniors	Seniors	Total
Infantry	192	78	20	5	295
Coast Artillery	64	35	8	14	121
Engineers	51	26	10	15	102
			TOTAL		518

The entire unit is organized into a Battalion, consisting of a band, two companies of Infantry, one company of Coast Artillery and one company of Engineers.

The personnel of the Department of Military Science and Tactics is as follows:

George H. Denny, A.M., Ph.D., LL.D., D.C.L., President of the University.

Rush S. Wells, Colonel, Cavalry, Professor of Mil. Science and Tactics.

Edward P. Noyes, Major, C. A. C., In Charge of C. A. Unit.

Vincent S. Burton, Captain, Infantry, In Charge of Infantry Unit.

Lovie P. Hodnette, Captain, Infantry, Assistant Infantry Unit.

Hoel S. Bishop, Captain, C. E., In Charge of Engineer Unit.

Charles Livingston, Staff Sergeant, Engs., Instructor, Engineer Unit.

Jesse B. Gregory, First Sergeant, Infantry, Instructor, Inf. Unit.

Clinton H. Wolfe, Sergeant, C. A. C., Instructor, C. A. Unit.

Ray Francisco, Sergeant, C. A. C., Instructor, C. A. Unit.

Climatic conditions are favorable for out door work. During about ninety per cent of the time out door drill and instruction can be held. Drill halls and indoor ranges are therefore unnecessary. The campus is ideal for drills and of sufficient size to drill at least one thousand students simultaneously. An armory sufficient for storing six hundred rifles is provided and also a store room and clothing room. In addition, two large rooms have been furnished the Coast Artillery Unit for laboratories. These are used for setting up the various fire control instruments, puff and terrain boards, etc., The two rooms are connected together by a complete set of telephones, so that one can be used for observing and B.C. stations while the other is used as a plotting room. Also three other rooms have been furnished for use of the R. O. T. C., and have been made into excellent sand table and fortification laboratories by the Engineer Unit. They are used by all three units for instruction in practical problems and have proven of great value. When needed, class rooms not in use by the academic departments are turned over to the R. O. T. C. for the time being, and there are always enough of such rooms available. The faculty has also promised to cooperate with the Military Department by helping to teach military subjects pertaining to their respective departments, such as Hygiene and First Aid, Military Law and History, etc. Military training is not popular with a majority of the students, but a slow improvement in this respect appears to be taking place. The compulsory feature in the lower classes keeps the units up to the minimum required strength. The commutation of subsistence is the chief inducement to those entering the advanced course. Without this commutation, it is not believed that the size of the ad-

vanced classes would warrant the expense involved in maintaining any R. O. T. C. unit at this institution.

The growth of the Military Department is dependent largely upon the growth of the institution itself. As the total enrollment in the University has increased from less than two hundred in 1896 to over 1350 at the present time (including 300 women but excluding vocational students), this feature is very encouraging. The present high standard of R. O. T. C. instruction required by the War Department is also reacting favorably upon the faculty and student body.



The R. O. T. C. at the University of Washington

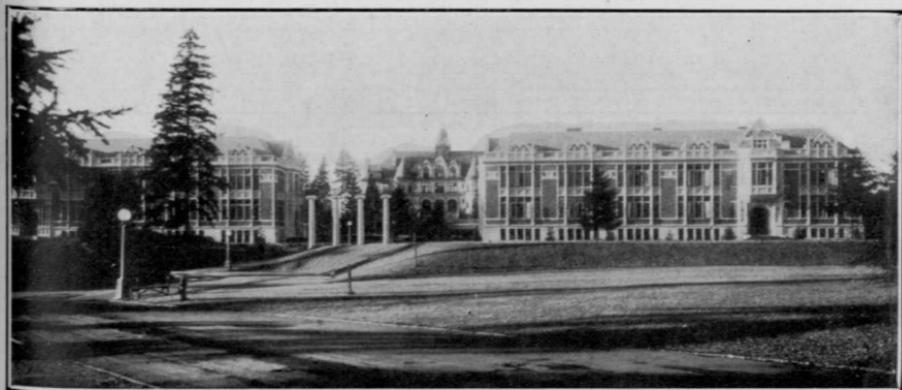
By Colonel Charles L. Phillips, Ret.

THE University of Washington, at Seattle, Washington, is a State Institution, supported mainly by biennial appropriations from the State Legislature and, not belonging to the class known as Agricultural Colleges, receives no assistance from the Federal Government. It comprises fifteen different colleges or schools, is co-educational and has a normal attendance of between 5,000 and 6,000 students. With more liberal support from the State to provide necessary expansion of teaching facilities, this number would be greatly increased. During the current year a large number of students have been turned away because of financial inability to provide the requisite number of teachers and class-room accommodations. The prospects of improvement along these lines in the near future are good. The standards of instruction are high, probably the highest among the State Institutions in the country.

The attitude of the University Faculty and of the students toward military instruction is worthy of special comment. There exists in the Northwest Territory, due to several causes not necessary to enumerate, a strong socialistic, pacifistic sentiment, vigorously and openly opposed to everything savoring of the military and no opportunity to misrepresent the facts or prejudice the minds of the faculty and students is permitted to pass unnoticed. To meet this continuous propaganda calls for the exercise of great tact and, on occasion, of forceful measures. Due to the eminent abilities of the President of the University, Dr. Henry Suzzallo, to judiciously control these untoward conditions, the spirit of the institution, of the faculty and of the students as well, as regards military matters has been changed from the practical state of near mutiny of a few years ago to an attitude, on the part of all, of appreciation of the benefits of military training and approbation of its

inclusion in the curricula of the University. During the incumbency of the writer, the Military Department has received the unqualified support and cordial assistance of the faculty and there has been a gratifying increase in the interest shown by the student body toward military instruction. Many of the conditions that have arisen might speedily have become difficulties adverse to success had not the active cooperation of the Faculty made smooth the rough places.

The University has maintained a military department for many years, practically since its foundation, and during the greater part of this period military training has been, to a varying extent compulsory either by action of the Faculty or, in some instances, as a provision under the State appropriation. Under present University regulations and by



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action of the Faculty, two years of military training, normally the first and second years of residence, is required of every able-bodied, male student as a prerequisite for graduation. An R. O. T. C. Infantry Unit was organized in 1916. This Unit is still in operation.

The President of the University is deeply interested in military training as an adjunct to the development of the youth who come under University influences and considers the opportunities afforded thereby for the upbuilding of character and morale unsurpassed by any other University agency. To bring the young men effectively under such influences a proper degree of interest must be incited and this is less difficult in proportion to the extent that practical application of the instruction is provided.

It was due to the President's appreciation of this principle and to the opportunities for practical application afforded by the proximity of the Coast Defenses of Puget Sound that at his request the R. O. T. C. Coast Artillery Unit was authorized for the University in May 1919.

This authorization came at about the middle of the Spring or last Quarter of the school year and no effort to organize the Unit was made

until the beginning of the Fall Term about the first of October, 1919. In the meantime, a study of the situation disclosed the fact that to carry out the program of instruction as directed by the Chief of Coast Artillery more time would be required than had been previously allotted by the faculty for the military training of the Infantry Unit. There was also the question of the coordination of certain of the military courses with others of similar character in the academic curricula. These matters having been presented to the President, he appointed a Military Committee of the Faculty, of which the Professor of Military Science and Tactics is a member, to consider and report, with recommendations, to the Faculty, all questions affecting the interrelations of the Military and other Departments of the University.

The result of the conferences of this committee was, in substitution for the three hours per week previously obtaining, Mondays, Wednesdays and Fridays at 11:00 o'clock, A.M. at which all members of the R. O. T. C. were assembled, the allotment for military training of the eleven o'clock hour on Tuesdays and Thursdays and the authority to require attendance for instruction at any hours on Mondays, Wednesdays and Fridays, for Freshmen and Sophomores, and at any hours during the week exclusive of Saturdays and Sundays, for Juniors and Seniors, for which the student had no other assigned duty in the academic departments, the total number of hours, however, for military instruction not to exceed five academic hours per week for Freshmen and Sophomores nor six academic hours per week for Juniors and Seniors, including in each case the Tuesday and Thursday general assemblies. It was also arranged that the Collegiate Departments of Law and History would give the required instruction in Military Law and Military History, respectively, and that the Department of Mathematics would give instruction in Orientation. It may, perhaps, be interesting to note that the Instructor in Higher Surveying adopted the Fort Monroe text on Orientation as the text-book for his course.

Credits for work done in the Military Department also received consideration and in place of having the rather unsatisfactory standing of "additional credits" allowed for the work of the first two years, collegiate credits of the same value and importance relative to graduation were allowed, five credits per year for the first two years and nine credits per year for the second two years or for the Advanced Course. This provided a scale of credits exactly corresponding to that obtaining throughout the University.

It must not be inferred that all these accommodations were accomplished at once. They are rather the results of development under conditions as these arose and as an official recognition of the importance of the work of the Military Department and of the standards maintained therein.

The R. O. T. C. organization comprises three Units, Infantry, Coast

Artillery and Air Service, the latter organized in the Fall of 1920. Its total strength averages about 1,000. It is organized into a regiment of three battalions of three companies each, there being two battalions of Infantry and one battalion originally comprised of the Coast Artillery and now of the Coast Artillery and Air Service Units, two batteries Coast Artillery and one Squadron Air Service. This seemingly arbitrary division was decided upon after a consideration of the lines of study pursued in the different colleges of the University and of the particular relation of each of these to the requirements of each of the Units. Their technical character, especially as regards mathematics and mechanics, pointed to the Engineering Colleges as peculiarly adapted to furnish personnel for the Coast Artillery Unit and as this conformed



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to the military organization adopted, the engineering students being about one-third of the total number of male students, it was decided to arbitrarily assign, at the times of registration, all engineering students to the third battalion and to the Coast Artillery Unit, opportunity being given, individually, to those who so desire, to transfer to the Infantry Unit. When the Air Service Unit was organized, one company of the third battalion was assigned to it.

The Coast Artillery Unit is organized into two batteries and numbers between 200 and 300 men. Cadet appointments as officers and non-commissioned officers of these batteries are confined to the batteries, that of battalion Major, to the 3d Battalion. Regimental field and staff appointments are made from the regiment at large.

Before entering upon the relation of the specific methods of instruction a brief analysis of the schedules is considered desirable. The programs

or schedules of instruction for the several Units, as issued by the War Department, present both confusion of terms and lack of coordination. A "basic" subject is defined, therein, to be one common to all arms. The four years' course is divided into periods of two years each, distinguished as "Basic" and "Advanced." Yet one finds in such Basic course subjects that are essentially special for the arm and in the Advanced Course those that are basic by definition. It is suggested that a less confusing terminology would distinguish the courses as Elementary and Advanced and the subjects as Basic and Special.

Again one finds in these schedules considerable variance in the proportion of time allotted to specific subjects that are essentially basic. As this allotment controls the scope of instruction it should, if the subject is of equal importance to all arms, be the same in all.

These considerations are of little importance when the operation of but a single Unit is in question. But when two or more Units are to be conducted simultaneously, considerable difficulty arises in coordinating common subjects. In some cases such coordination has been found impracticable with the result that the subject must be considered special rather than basic thus multiplying the work of instructors.

Consideration of the wishes of the students with the view of maintaining or encouraging their interest operates also to render changes in the schedule advisable. It has thus been found necessary to double the time allotted the Coast Artillery Unit for Infantry drill in order to satisfy the aspirations of the students in the matter of Cadet appointments. The extra time allotted by the Faculty for military training over and above the three-hour and five hour W. D. requirements in great part compensates for this excess.

In detail the methods of instruction are:—For Freshmen:—On Mondays Wednesdays and Fridays one hour each day, elementary instruction, progressively arranged. The sections report at 8, 9, 10, 11, 1, 2 or 3 o'clock according as the individuals composing them have available periods free from other academic duty and number variously from 25 to 150. The instruction is oral and is given mainly by regular non-commissioned officers supervised by regular officers. Occasionally the officer takes part in the instruction. For Sophomores:—Similarly in sections by non-commissioned officers in elementary subjects and by officers in all special subjects. This instruction is also oral.

The large number of students comprising the Freshmen and Sophomore classes made text-book instruction by the limited number of instructors impracticable. The method was tried and found unsatisfactory. The oral method has been found highly effective.

For Advanced Course:—The days and times of meeting for the sections is arranged to suit the convenience of all. The instruction is given by officers and is mainly class-room text-book instruction.

All lectures on subjects of general interest are given on Tuesday at

11:00 o'clock, it being possible to have the student body together only on Tuesdays and Thursdays. Otherwise this hour on Tuesday is devoted to Coast Artillery Drill. Thursday at 11:00 o'clock is assigned to Infantry Drill, company, battalion or regimental formation and exercises. The regular officers and non-commissioned officers assigned to the Unit are designated as Unit Director, who in addition to his duties as instructor exercises a general supervision over all instruction and training of the Unit and is a member of the General Board for the consideration of such matters of general interest as may be presented to it by the Professor of Military Science and Tactics; Instructors, including Senior Battalion Instructor whose special duties relate to the Infantry instruction of the battalion and the selection of candidates for Cadet appointments; and Assistant Instructors consisting of all non-commissioned officers.

The facilities for instruction are quite adequate. The administration building houses the offices of the Professor of Military Science and Tactics and his administrative assistants, Adjutant and Personnel Officer and clerks, the Unit Directors and Instructors, two recitation rooms, one of which is fitted as a library and one as a general model room, museum, and club room for the Cadet Officers. There is also a large armory, 80' by 280', in which drill is practicable during inclement weather and which has also installed, in one end, accommodations for seacoast fire control apparatus consisting of two observing stations, a plotting room and a battery or fire commander's station equipped with appropriate apparatus. The armament provided consists of one 155-mm. G. P. F. Rifle, one 8" Howitzer and one tractor. Additional recitation rooms, if required, can be obtained at the University. The specific buildings pertaining to the Military Department are on the campus and constitute a separate single group.

There are two useful and much valued adjuncts to the plant as above described. One is the rifle range at Fort Lawton quite conveniently accessible to which squads are sent each Saturday morning for rifle practice. This is a voluntary feature of the training and assists materially in promoting the interest of the students in the University Rifle Club and the R. O. T. C. Rifle Club, both of which are in active operation and in frequent competition with other rifle associations throughout the country.

The other adjunct has already been noticed, the Coast Defenses of Puget Sound. Each year during the Spring Term, so many of the Coast Artillery Unit as can do so visit these fortifications and spend the week end, Saturday and Sunday, under practical instruction in seacoast artillery materiel and service. In this instruction the Coast Defense Commander and his officers and non-commissioned officers render valuable and much appreciated assistance.

The matter of discipline has received special consideration. In the

usually accepted significance of the term it cannot exist under collegiate conditions, the opportunities for the application of the punitive idea involved are too restricted. The students are subject to military requirements only during certain specified hours separated by long periods of complete freedom of action. Prompt and regular attendance, good conduct and undivided attention and the proper rendition of military courtesies during the periods assigned to military instruction and training are the only requirements that can be enforced. These, though expressed in military terms with a military background, are identical in spirit with the requirements in other Departments of the University and, in principle, must be safe-guarded in accordance with locally adopted methods. It is to the advantage of the military regime that the laxity of civil discipline is, by common consent, replaced by stringent adherence to rules. By action of the Faculty, violations of military requirements are punished under a system of demerits which have an effective influence in determining the student's grade in his work in the Department. In addition to this routine disciplinary action, since in the case of a predisposition to carelessness the accumulation of demerits might lead, through discouragement, to insubordinate mental attitude, it is the practice, before such a culmination is imminent, to summon the student to a conference with the Professor of Military Science and Tactics at which by appeal to the student's honor and manhood, the effect of his conduct upon the development of his character, to his self-respect and to his loyalty to the University, effort is made to set him upon the right road. This is but a recognition of the fact that the American youth may be led, he never can be driven, to any course of action.



The R. O. T. C. at the University of Cincinnati

By Major Sidney H. Guthrie

THE R. O. T. C. at the University of Cincinnati became a fact in the early spring of 1919. The Engineers were the first on the ground, having secured authority for an Engineer Unit long before any other branch of the service, and Major Lewis, temporary officer, was sent to the University to establish the unit. He was later replaced by Lt. Col. Charles H. Rankin, Engineers, also a temporary officer.

During the early part of 1919, several officers from the War Department had visited the University and had talked of establishing various

units. Unfortunately, much was promised in the way of equipment and curriculum for these units that could not be fulfilled. This was only natural, since the R. O. T. C. was in its infancy and the officers in charge of it had the herculean task of devising a standard system of instruction and training, and each officer who arrived on the scene would put forth much in the abstract. This was very unfortunate, for after emerging from our great state of military unpreparedness, the college deans and professors were much in earnest about some system of military training. Furthermore it did not occur to them that promises could be made by representatives of the War Department and remain unfulfilled, and the



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result was what could have been expected. Long after we were in operation here we heard much of the broken promises of the War Department and this was a very material handicap under which we had to work.

In May of 1919 permission was granted for the establishment of a Coast Artillery Unit at this University and Major (then Colonel) Sidney H. Guthrie, C. A. C., was assigned to duty in charge of it. About this same time, permission was also granted for the establishment of units of Infantry and Signal Corps.

Major Guthrie arrived for duty at the University on June 3, 1919, and by virtue of his rank, became the Professor of Military Science and Tactics which position he has since held with the exception of six months when he was forced to be absent through sickness.

The work of organization at this University was tremendous. This is a co-educational municipal university consisting of colleges of Liberal

Arts, Engineering, Law, and Medicine, the first two of which are grouped together on the University Campus, the others being located elsewhere in the city. The total enrollment is approximately 3,500; 1,000 of whom are enrolled in the Engineering College. Effort was made to interest all the colleges in military training but it was soon learned that all of our efforts had to be confined to the Colleges of Engineering and Liberal Arts. The Liberal Arts college is a regular thirty-six week college where students attend full time and are out by the middle of June. The College of Engineering is run on the co-operative plan for eleven months of the year and the students spend half of their time in the school and half



THE R. O. T. C. AT THE UNIVERSITY OF CINCINNATI

out on jobs in practical work. Freshmen and Sophomores spend two weeks in school and two in the shops. Other classes spend four weeks in school and four in the shops. It takes five years to graduate from the Engineering College. It is readily seen from this, that it is necessary to keep the military work of the colleges of Liberal Arts and Engineering separated and that in the Engineering College we are going over the same ground twice in the same year.

Programs of instruction were not approved and sent out by the War Department until nearly time for the opening of the school year. This necessitated the hasty preparation of Schedules of instruction which were bound to contain many imperfections and to require much revision. In addition to this, the entire programs were changed by the War Department before the beginning of another school year.

When work was ready to begin in the fall of 1919, it was suddenly found that there was no officer available for the Signal Corps Unit and

the War Department refused to allow this unit to be put into operation. This was a bitter disappointment to the University, particularly to the Professor of Electrical Engineering who wanted to carry the course on in spite of the lack of an officer.

For the sake of administration the courses were assigned to the authorized units as follows; to the Infantry Unit, the College of Liberal Arts; to the Engineer Unit, the departments of Chemical and Civil Engineering of the College of Engineering; to the Coast Artillery Unit, the departments of Electrical, Mechanical and Commercial Engineering of the College of Engineering. At the time that this division was made, this divided the College of Engineering approximately equally between the Engineer and the Coast Artillery Units. Since that time, the registration has changed so much that at present the Coast Artillery Unit is considerably larger than the Engineer Unit.

The Infantry Unit did not last long as it was impossible to stimulate sufficient interest in the College of Liberal Arts. After a brief career it was discontinued and the Infantry Officer returned to duty with troops.

In the beginning, the attitude of the students was not favorable to military training. This was due to two effects; the hopeless failure of the S. A. T. C. and the late war. Everyone was fed up on military training and all feared the R. O. T. C., wondering what relation it was to the S. A. T. C. Thus the Coast Artillery and the Engineer Units would undoubtedly have gone the way of the Infantry Unit had not the faculty of the Engineering College passed a rule to require two years of military training of all physically fit male students of that college.

From the beginning, the attitude of the faculty of the Engineering College has been strong for the military training and especially in the Dean of the Engineering College, Dean Herman Schneider, have we had a strong friend and advocate. Without his determination to place the Military Department upon a firm and sound basis, our efforts must have been long since abandoned.

The attitude of the students has changed materially from what it was in the beginning. There are several reasons for this, chief among which is the time that separates us from the World War. In addition to this, the students themselves have come to appreciate in a measure the value of military training and the desire to fit themselves for efficient service for their country in case of need.

There are no longer any obstacles to military training in the College of Engineering at this University except the lack of time which will always remain a serious handicap. For the past two years we have been obliged to carry on all of our training in one hour per day, all of our classes coming in that hour. For this year and the future, we have secured two hours per day thus slightly lightening the burden upon the instructor personnel. This is the maximum number of hours per day that we will ever be able to get because of the fact that this college carries a par-

ticularly difficult curriculum. The curriculum is in no sense elective, but all work is thoroughly mapped out for each and every student who wishes to graduate and receive an engineering degree.

During our first year no effort was made to carry any advanced work but we confined our efforts to the first two years, or the Basic Course. This gave us an enrollment of about 500 students. The enrollment has remained at approximately this figure throughout. Last year for the first time, we endeavored to start a class in the Advanced Work. The result was six students in the Coast Artillery Unit and ten in the Engineer Unit. Of these students, one of the Coast Artillery Unit and three of the Engineer Unit have quit the University. This year a further enrollment in the Advanced Course is noted of twenty students for the Coast Artillery Unit, and sixteen for the Engineer Unit, making a total of forty-eight students. To my mind this indicates a healthy growth and we should continue to prosper.

This year the establishment of an Ordnance Unit has been authorized and in the future we will have to share the advanced course students with this Department. No effort will be made to carry any advanced work in the Ordnance Unit this year. The basic instruction for this unit will be given in the Coast Artillery Unit. The time of the officer in charge of the Ordnance Unit will be spent this year in working out a scheme for the advanced course students which will dovetail more or less with the curriculum of the Engineering College.

As a further indication of the healthy growth we have experienced both in spirit and in numbers, the Cadet officers have petitioned the National Society of Scabbard and Blade for a Company at this University and before long they should be enjoying all the benefits and privileges of that military fraternal order.



The R. O. T. C. at The Citadel

By Major Paul J. Horton, C. A. C.

THE Citadel, situated in the center of the City of Charleston, has a history of which the State of South Carolina is very proud and the traditions of the institution can always be called upon to bring out the best there is in the individual cadet and the Corps as a whole.

Previous to 1841 The Citadel was used as an arsenal by South Carolina. In 1842 the scientific and practical education of the cadet was begun. The cadets continued to act as a guard for the arsenal, doing their college work in the morning and their training in the duties of a soldier

in the afternoon. The value of the military training that was given before the Civil War is strikingly shown by the fact that of the two hundred and forty graduates before the close of the war between the States, about 200 were officers in the Confederate service and forty-three were killed in battle.

The honor roll is not however confined to the graduates of the Citadel, for the Citadel cadets on Jan. 9, 1861, manned the battery of 24-pounders on Morris Island and drove off the steamer "Star of the West" which was attempting to relieve Fort Sumter—thus firing the first hostile shot of the War. Throughout the war the cadets were in active service, closing the same on May 9, 1865, by a skirmish with Stoneman's raiders near Williamston, S. C.—thus firing the last shot of the War delivered by any organized body of troops East of the Mississippi River.

From the fall of Charleston in 1865 to 1881 The Citadel was occupied by Federal troops. In October, 1882, The Citadel was re-opened as the Military College of South Carolina and has furnished to South Carolina a great number of her best citizens and to the Army and Marine Corps of the U. S., a large number of most efficient officers. Many of the ideas of West Point have been adopted in the foundation and management of the institution. The strength of the Corps of Cadets for several years has been about 300, composed of what are known as pay and beneficiary cadets. The latter class is composed of 68 cadets whose expenses are paid by the State of South Carolina and of 6 cadets whose expenses are paid by the City of Charleston. The appointments are given at least one for each county, the more populous counties being given two or more. While a number of the other colleges of the country are adopting the coeducational feature, the strict military ideas and traditions of The Citadel are such as to place coeducation a long way in the future, if that date should ever come.

From the foregoing brief history the reader can get a conception of the military training of The Citadel that will make unnecessary any lengthy detailed discussion of the work of the military department.

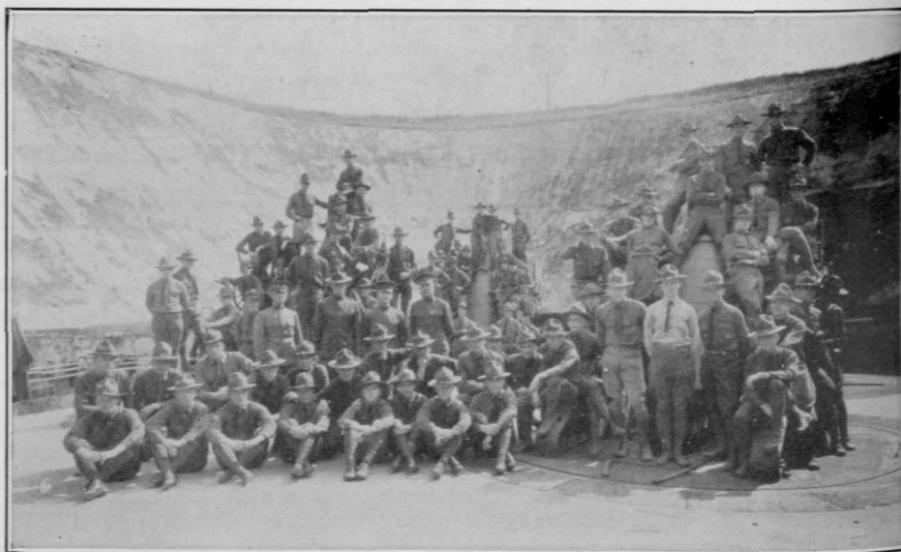
Since the Citadel is essentially a military college and depends a great deal upon the record of the military department for its standing among the other institutions there has never been any difficulty in securing the support of the faculty or proper officers, class rooms and laboratory space. Class rooms are large and well equipped and the laboratory has a floor space of thirty feet by ninety feet.

The attitude of the cadets toward military training is that of any body of representative young men under the age of twenty-one at our best military institutions. A great many of them put forth their best efforts, while a great number of them are lukewarm in their enthusiasm, and others require constant attention and discipline. Each applicant for the college must be over 16 years of age and must pass a physical examination that qualifies him for the R. O. T. C. It is the desire of

the institution to have every cadet belong to the R. O. T. C., and he is required to take the same training whether or not he so belongs. This fact is made known to the cadet on his entry into the institution and at present every cadet belongs to the R. O. T. C.

There is only one college at the Citadel. The degree of Bachelor of Science is given to all graduates. The degree of Civil Engineering is granted to those students in Engineering who, after graduation, furnish satisfactory evidence of engineering work of a superior quality extending over at least three years and who submit a satisfactory thesis.

In the Basic Course one hour each week is given to class room recitation and in the Advanced course two hours each week are given to this



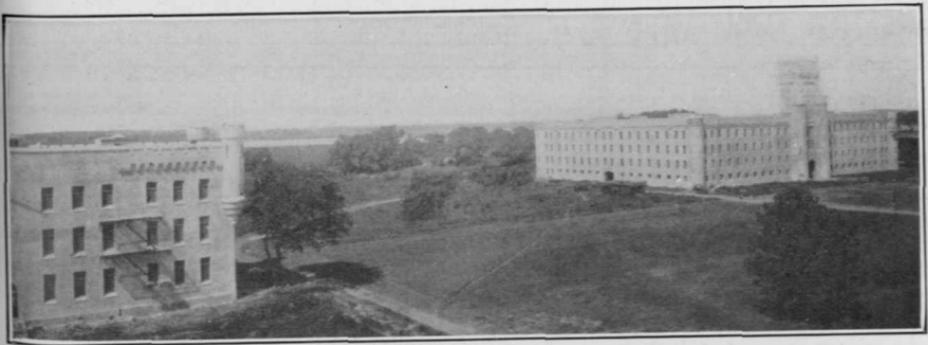
SOPHOMORE CLASS OF THE CITADEL AT FORT MOULTRIE, S. C.

class of instruction. Lessons are assigned, recitations and examinations held and grades given just as in any other department of the college. The climate of Charleston permits outdoor work all the year, and in addition to the above instruction about nine hours each week are given to outside work. This includes from 8:30 A. M. to 12 M Saturdays. During this time the methods of instruction used are very similar to those used in any company of Coast Artillery. The picture shows sections of Junior and Sophomore classes at Ft. Moultrie, S. C., on a Saturday morning in January.

At a first glance the above hours and conditions would indicate the greatest possibilities, but even at a strictly military college there are difficulties. The Citadel has a volunteer band and various athletic teams, all of which are essential to the life of the college. This means that for outdoor work there will always be a number of absentees. While

every cadet attends more drills during the year than are required by law, yet for the above condition it is very difficult to carry out a uniform schedule of instruction.

This is the last year the Citadel will occupy the picturesque old buildings in the center of Charleston. It has long been the desire of South Carolina to provide "Citadel Training" for more of her young men and in 1918 this was made possible when the City of Charleston gave 200 acres of land in the edge of the city for building a new and even greater Citadel. The location is a beautiful one, overlooking the Ashley River and the Atlantic Ocean in the distance. The construction of the new plant is well under way and it is intended eventually to construct three such barracks buildings as the one shown. In the new plant, when completed, the most favorable consideration has been given to the military department in the way of recitation rooms and laboratories.



ADMINISTRATION BUILDING AND BARRACKS—THE CITADEL

The Coast Artillery unit was organized in September, 1919, being composed of twenty members of the Junior class taking the Engineering course and 65 members of the Sophomore class. Seventeen of the above Junior class graduated in June, 1921, two of whom have gone into the Regular Service, and all others have accepted commissions in the O. R. C. or have signified their intention of doing so as soon as they become of age, the average age of cadets at graduation being just under twenty-one.

Of the 65 cadets who joined the unit in the Sophomore class, 38 have reached the Senior class. In the Junior class there are now 28 cadets and in the Sophomore class 32. The Citadel has Infantry and Coast Artillery units only. The training of the units has so far been very closely allied. Members of both units are assigned, without distinction, to the four companies of the cadet battalion. So closely are the two units associated in their work, all members of the Freshman class are carried as belonging to the Infantry unit, and at the end of the year an effort is made to place the cadet in the unit for which he is best suited. This scheme is working very favorably for the Coast Artillery unit.

New Hampshire College and Its R. O. T. C.

By Major C. R. Snow, C. A. C.

THE COLLEGE



NEW HAMPSHIRE College of Agriculture and the Mechanic Arts was created by an act of the New Hampshire Legislature in 1866, and was established at Hanover as a state institution in connection with Dartmouth College. In 1893, the college was moved from Hanover to Durham. At that time the total enrollment in the college was 64 students, since when it has gradually increased until it is now over 900, the enrollment having doubled about every seven years.

There are three divisions of the college, the Agricultural, Arts and Science and Engineering, each offering a four year course leading to the degree of Bachelor of Science, besides special and advanced courses. For a degree, the completion of 216 term hours credit is required in each the Agricultural and Engineering divisions and 204 in the Arts and Science division. Four and one-half credit hours a year are given for work in the basic R. O. T. C. course and nine credit hours a year for the advanced courses.

The present college enrollment of men students who are candidates for a degree is as follows:

Agricultural division	123
Arts and Science division	236
Engineering division	281

Besides these there are about 280 women and special students. The faculty and administrative staff includes 105 members and the equipment consists of twenty principal buildings, extensive farm lands, and one of the finest athletic fields in New England.

LOCATION

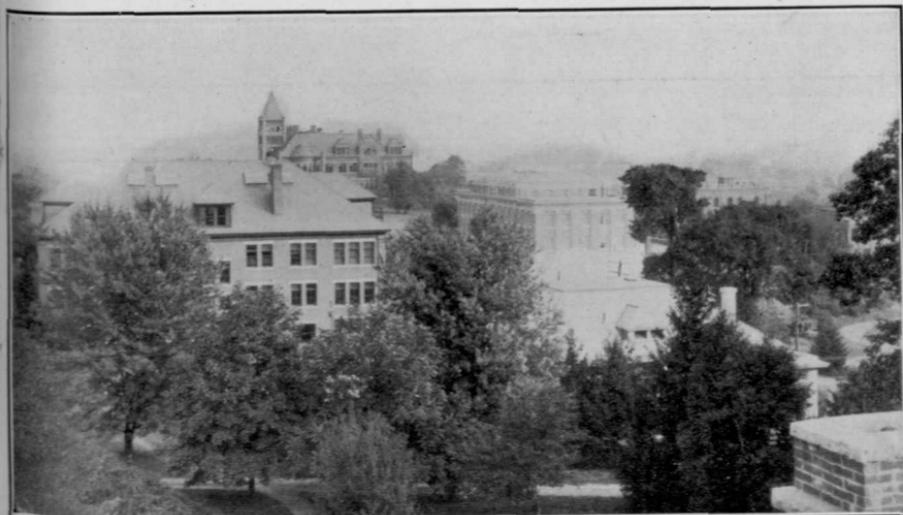
Durham, the site of the college is a town of six hundred inhabitants on the Boston and Maine Railroad. It is 62 miles from Boston, 54 miles from Portland, Maine, 17 miles from Portsmouth, and 5 miles from Dover, N. H., all of which places are easily accessible by train or automobile. The college is the principal feature of the locality and its position assures the maximum of college life and spirit.

R. O. T. C. UNITS

The college maintains an Infantry and a Coast Artillery R. O. T. C. unit. Enrollment in the basic course is required of all freshmen and sophomores who are eligible. The advanced course is elective. About 78% of the freshmen and sophomore men are enrolled in the basic

course and 39.7% of the students becoming eligible this year enrolled in the advanced course.

The infantry unit was established in 1916. In the spring of 1919 the college applied for a Coast Artillery unit and in June of that year an officer was detailed to prepare for its establishment in the fall. With the opening of college in the fall of 1919 enthusiasm over military training did not run high as nearly every person eligible for training at that time had had a sufficient amount of it in an intensive form to satisfy his immediate desire. The technical nature of coast artillery work, however, appealed to the students in the engineering courses and it met with a very kindly reception. Later on, students returning from the



ACADEMIC BUILDINGS—NEW HAMPSHIRE COLLEGE

summer camp spoke enthusiastically of their experiences there, and this decided the matter of enrollment for many who had heretofore hesitated on account of this unknown factor in the course. Enrollment in the R. O. T. C. is now 380 students, about one hundred of whom are in the Coast Artillery unit.

Enrollment in the advanced Coast Artillery course has grown as follows.:

Academic Year	Students enrolled in C. A. advanced course	Per-cent of eligible students enrolling in C. A. advanced course
1919-20	2	..
1920-21	11	25
1921-22	28	66

In the fall of 1919 there were no students at the college who had taken the basic Coast Artillery course. The course was, however, offered

to students who had completed the basic infantry course both for the purpose of introducing it to the students and so that the instructor might obtain experience in handling it so as to be better fitted to take care of a larger enrollment in subsequent years. The benefits obtained by the instructor were well worth the time and effort expended on this small class.

COAST ARTILLERY INSTRUCTION

The freshman year course of instruction is identical for both units and no division of the students is made. In order to estimate the relative strength of the units, freshmen are from time to time asked to indicate which they will elect when returning next fall. Engineering students are encouraged to elect the Coast Artillery unit and the sophomore year



GUN SHED AND C. A. UNIT—NEW HAMPSHIRE COLLEGE

course is scheduled so as to be available for all regular engineering students. The problem of scheduling the advanced course is a difficult one as the engineering division offers six separate courses each having a number of important electives, and students in the Coast Artillery unit are drawn from all of these courses. Heretofore, advanced course students have met the instructor by appointment, but the matter of regularly scheduling the course is being worked out.

The instruction during the freshman year has for its object the training of the student in military conduct and discipline as thoroughly as can be done in a total time of less than one hundred hours. To this end the entire year is devoted to infantry drill, military courtesies, care of equipment, and small arms firing. Each student attends two classes a week where the instruction is given by an officer, sometimes assisted by advanced course students. These classes consist of from thirty to sixty men, and are scheduled at various times in the morning throughout the week. The entire R. O. T. C. is also organized as an infantry bat-

talion which assembles once a week for instruction in infantry drill, ceremonies, and tactics. Sophomores are assigned to organizations in the battalion as non-commissioned officers and advanced course students as officers without regard to the units in which they are enrolled. Organizing the units separately would have more disadvantages than advantages, and since the instruction given the battalion is common to both arms, both units gain by the combination. Ceremonies are taken up as early as possible and the first parade is usually held during the fifth week of instruction. During the freshmen year about eighty per-cent of the instruction is practical, experience having shown that theoretical instruction in infantry drill and small arms firing to be of advantage must be preceded by a certain amount of practical work, and by the time sufficient practical work has been given, the hundred hours available are about gone.

The object of the second year's work is to prepare the student to take up the subjects of orientation and gunnery in the junior year, and at the same time improve his leadership and military bearing. He attends infantry drill with the battalion once a week. The remaining two hours a week are devoted to sketching, map reading, and artillery materiel, about fifty-five hours being available for the latter subject. A two hour a week course in physical education is required of all freshmen and sophomores and is given by that department of the college.

The third year is devoted to preparing the student to obtain the maximum benefit from the advanced camp. Orientation and gunnery are the principal subjects taken up. Some theoretical instruction in motor transportation is given and the student attends infantry drill as an officer one hour a week during the fall and spring terms.

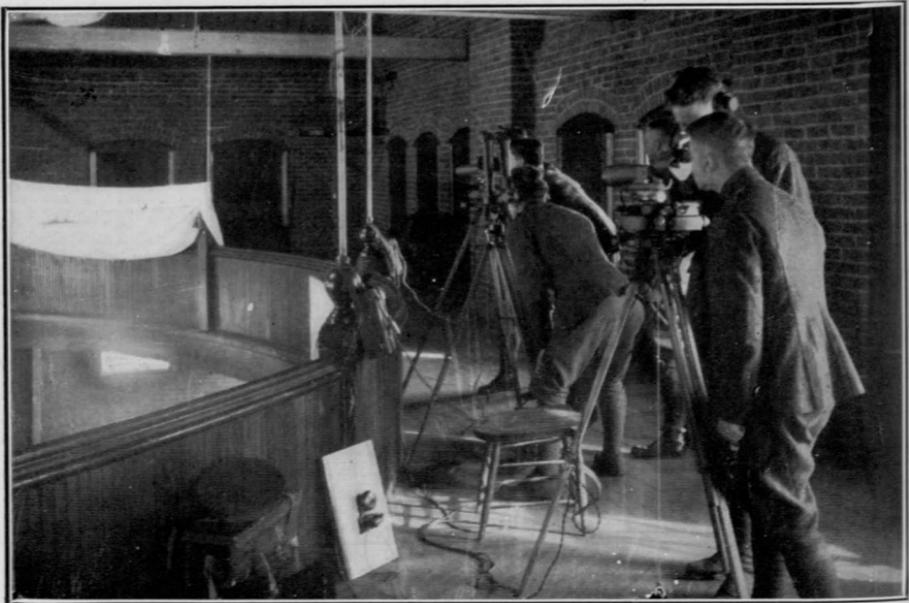
The senior year's instruction is for the coordination and practical application of the subjects previously taken with a view to fitting the student to perform the technical duties of a lieutenant of artillery. The employment of artillery is the principal subject of the year and it offers numerous opportunities to review and apply the work of the three previous years.

EQUIPMENT

The college has turned over to the Military Department for its exclusive use, the following space:

- 1 Office for officers.
- 1 Office for warrant officer and clerk.
- 1 Recitation room.
- 1 Room which is used as a detachment room, plotting room and storeroom.
- 1 Clothing storeroom.
- 1 Rifle and equipment storeroom.
- 1 Building about 100 by 30 feet for guns and tractor.

For small arms firing, there is a 20 yard indoor gallery in the basement of the gymnasium, and also a 300 yard two target outdoor range. There is on hand practically all of the materiel prescribed by Special Regulations No. 44, for a Coast Artillery unit. The exclusive use of a recitation room is particularly advantageous, as the equipment can be kept ready for use at all times and unfinished work can be left in place from class to class. A base line and a course for vessel tracking to a scale of 1/400 has been laid out in the gymnasium and a temporary installation of fire control equipment has been made. Should this prove of sufficient value in instruction a more elaborate installation will be undertaken. While there are ample facilities for Coast Artillery instruction, Infantry in-



VESSEL TRACKING—NEW HAMPSHIRE COLLEGE

struction is somewhat handicapped by the climate and the fact that the college has outgrown its present gymnasium and armory. Weather suitable for outdoor Infantry instruction can be depended upon only during the first two months of the fall term and the last two months of the spring term.

PROBLEMS OF THE R. O. T. C. AND ITS FUTURE

During the past twenty-seven months the R. O. T. C. has made rapid progress and many problems which previously seemed most difficult are being worked out with increasing satisfaction. These problems divide themselves into two classes, those of furthering the R. O. T. C. movement and those of instruction.

The furtherance of the R. O. T. C. movement is a matter of gaining the interest of the student and the people in our military problems and in obtaining their willingness to devote time to preparation for a possible emergency, the probability of which always seems exceedingly remote until it is suddenly upon them. The solution of this problem lies in continuing to make the courses more valuable to the individual without detracting from their value to the nation. The problem of instruction is one of utilizing to the best advantage the 530 or so of hours available during the four years of college and the six or twelve weeks available at camp. This can be continually improved by careful selection of the subjects and the time to be devoted to each, together with more efficient methods and tools of instruction. The principal tool for the instructor is the text book and a careful adaptation to the previous training of the student is necessary.

There is no doubt but that the R. O. T. C. is here established in the favor of the faculty and the students, and if progress continues in the same degree that it has in the past, a bright future lies ahead.

It is but proper here to express appreciation of the help rendered to the R. O. T. C. by the President of the College and all members of the college staff. Not only have they always given every available facility needed in the R. O. T. C. work, but they have encouraged the R. O. T. C. movement by all means at their command.



The R. O. T. C. at Washington University

By Major Francis P. Hardaway, C. A. C.

 WASHINGTON UNIVERSITY, originally named Eliot Seminary, was established in 1853 under a State charter which imposed no limitations of any sort, excepting those forbidding sectarian or partisan instruction. For some years, only day and evening schools for boys were conducted. In 1857, the formal inauguration of the University took place; the first college degrees were granted in 1862.

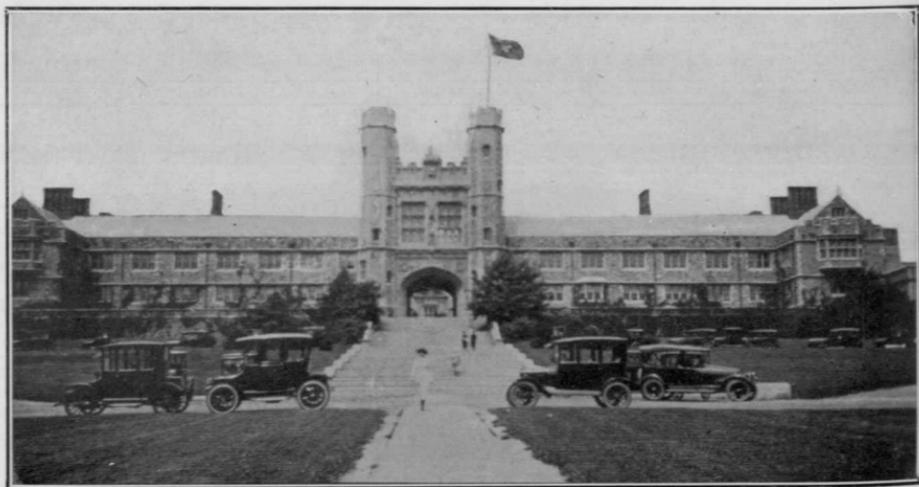
From time to time additional endowments were received and new departments added. In 1905, the University was moved from its downtown location to a new site on the western edge of the City where buildings of a uniform design had been constructed to house the undergraduate as well as some of the graduate departments. Other graduate departments are located in different parts of the City.

The growth of the University has been especially rapid in recent years and the total enrollment in all departments including the extension courses is now nearly 5,000. The University is co-educational and includes the following schools: The College, The Schools of Engineering

and Architecture, The School of Commerce and Finance, The Henry Shaw School of Botany, The Graduate School, The School of Law, The School of Medicine, The School of Dentistry, The School of Fine Arts, and the Division of University Extension.

The buildings which are of red granite and Bedford stone and conform to the Tudor Gothic style of architecture, are located on high ground to the west of the City, and, from their commanding position, furnish an imposing and pleasing spectacle from many viewpoints in the vicinity; in fact, it may be said without fear of contradiction that the University, in beauty of buildings and grounds, is surpassed by only one other in the country.

Without doubt Washington University ranks as one of the foremost institutions of learning in the Middle West and its position in St. Louis



UNIVERSITY HALL—WASHINGTON UNIVERSITY

and its large tributary territory is unique. The importance of maintaining a Reserve Officers' Training Corps, even though its units be small, at a University of this type, both from the standpoint of benefit to the Government and to the institution, is in somewhat greater ratio than the size of the Units maintained.

The history of military training at Washington University is short. There was no sort of military training prior to the World War. It must be said, however, that, although no trained reserve of graduates existed, the alumni, faculty, and student body, both individually and through collective effort, contributed to the common cause in large measure.

In the fall of 1918, the Students' Army Training Corps was established and upon its termination about January, 1919, an Infantry Unit of the Reserve Officers' Training Corps was organized. The confusion and lack

of co-ordination attendant upon the establishment and subsequent demobilization of a war time organization produced conditions which were probably as unfavorable as any to be found for the initiation of military training under the National Defense Act.

The following year, in October, 1919, a Coast Artillery Unit was established with an enrollment of 70. The enrollment increased to 112 at the beginning of the 1920-1921 academic year. The numbers in the Infantry Unit had, however, diminished and its withdrawal was ordered. This was particularly unfortunate as many students in the College who have no inclination towards a somewhat technical branch are precluded from enrolling in the military courses.

There was partial compensation for this loss, however, in the establishment of a Medical Unit at the School of Medicine last year which has had a normal growth since its inception.

The enrollment in the Coast Artillery Unit, though it did not meet reasonable expectations, increased to 132 this year; of this number 18 are in the advanced course. Although the enrollment is very small in comparison with the total number registered for University courses, it must be remembered that the Coast Artillery Unit obtains its members principally from the Schools of Engineering and Architecture. Twenty-two per cent of these students are enrolled in the Unit.

The personnel of the Department of Military Science and Tactics consists of one major, Medical Corps, two majors, Coast Artillery Corps, one staff sergeant (clerk), one sergeant (gun mechanic), one sergeant (motor mechanic) and one private 1st class, (mechanic). With the exception of the staff sergeant who is in charge of the office and all clerical work, the personnel both performs administrative duties and engages in instructional activities, the enlisted personnel being assistant instructors while all classes are personally conducted by the commissioned personnel.

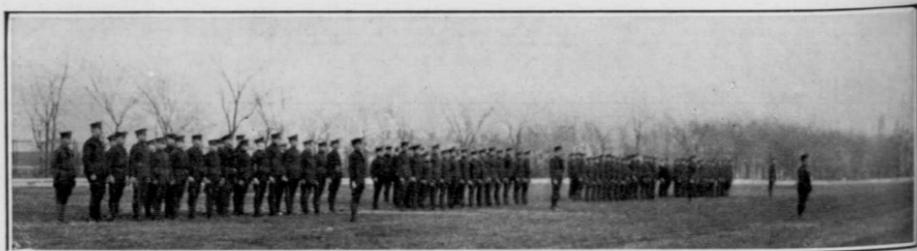
The Department has the usual equipment with the exception that only one piece of artillery, the 155-mm. G.P.F. Gun, was asked for and furnished. The gun and motor transportation, when not in use, are stored in a shed recently constructed by the University. The balance of the equipment is stored in a large, well lighted, room in the Gymnasium which also serves as a laboratory and class room for a number of sections. Other class rooms in various buildings are provided as required but the laboratory in the Gymnasium is insufficient and additional space has not been made available so far. Owing to the fact that the campus is large, there is ample room for Infantry drill and practical instruction out of doors .

All classes are divided into small sections for the theoretical and much of the practical work, no section containing more than 25 students; in fact, it has been necessary to form too many sections resulting in much duplication of effort on the part of the instructors. Once a week, however, the entire Unit is assembled for Infantry drill.

The program of instruction follows very closely the one prescribed by the Chief of Coast Artillery though advantage has been taken of the latitude permitted to make minor changes in the time allotted to various subjects.

Military training at Washington University is entirely voluntary with the exception that during the first two years it is elective with Physical Education, satisfactory completion of either course being pre-requisite to graduation.

In the basic course, students do not receive academic credit. The College grants 3 units of credit a semester to students in the advanced course. A student completing the latter course may thus secure ten per cent of the credits required for graduation. Graduation from the Schools of Engineering and Architecture is not based on a system of units of credit but upon the satisfactory completion of prescribed courses; an elective subject is provided, however, during the junior and senior years and students who have completed the basic course may thus elect the advanced course.



INFANTRY DRILL—WASHINGTON UNIVERSITY

Methods of instruction conform as closely as practicable to those of other departments of the University. No effort is spared to make the courses interesting to the students without omitting necessary instruction for it is undoubtedly true that a course which does not interest the earnest student is one that is poorly conducted.

It has not yet been possible to arrange for the teaching of certain military subjects in other departments but it is to be hoped that such arrangements may be made as there are a number of military subjects so closely allied to the academic work that they may be much better taught by other departments.

While the success of the Unit is principally dependent upon the efficient conduct of the courses of instruction, it is nevertheless true that the proper recognition of the Department of Military Science and Tactics depends very largely upon the attitude of Faculty and Student body. This attitude at Washington University is not especially favorable. This is, however, but a general statement that must be qualified by acknowledging the assistance and encouragement given the Department

by the Chancellor, the Treasurer, the Deans, and many members of the faculty as well as individuals and organizations of the Student Body. This attitude is rather a reflection of the reaction that has always occurred in all countries upon the termination of a war of any magnitude.

It is to be hoped that the Reserve Officers' Training Corps at this University as well as elsewhere will be able to survive this critical period for, until one may prophesy with absolute assurance that there will never be another war, military preparation against war is necessary. All must realize that military training in Universities is, at once, the most economical and most democratic method of providing the trained reserve of officers which makes it possible to restrict to a minimum the size of the permanent military forces.



The R. O. T. C. at the Agricultural College of Utah

By Major Alexander C. Sullivan, C. A. C.

HE Agricultural College of Utah is a land-grant institution founded March 8, 1888, under the terms of the Act of Congress of July 2, 1862, donating land for the establishment of colleges where the leading object shall be practical instruction in Agriculture and the Mechanic Arts, including Military Tactics. Under the above Act of Congress, and the Enabling Act providing for the admission of Utah to the Union, twenty thousand acres of land were granted to the State of Utah, from the sale of which there should be established a perpetual fund, the interest to be used in maintaining the College. Under the Hatch Act, approved in 1887, the State receives \$15,000 annually for the Experiment Station. Under the Adams Act of 1906, the State receives an additional \$15,000 annually for research work by the Experiment Station. Under the Morrill Act of 1890, amended by the Nelson Act of 1907, the State receives \$50,000 annually for instruction at the Agricultural College. Under the Lever Act, the State received, in 1917-18 about \$15,000, which will increase for four years, for agricultural extension work to be done by the Agricultural College.

These federal appropriations, together with the land-grant fund, represent the income received from the general government. Since most of these funds must be issued in accordance with the law for specific purposes, the institution is dependent on State appropriations for funds with which to provide additional instruction and for general maintenance.

The Agricultural College of Utah is situated at Logan in Cache County in the northeastern corner of the State of Utah. Logan, the county

seat is an agricultural community of ten thousand souls living 4400 feet above sea-level.

The institution is co-educational. This year there are enrolled in the institution 420 men and 250 women. In addition, there are about 240 Federal Vocational men (disabled soldiers) undergoing special vocational training under the direction of the Veterans Bureau. These are naturally exempt from further military instruction.

There are five schools in the college; General Science, Commerce, Agriculture, Agricultural Engineering, and Home Economics. A Director is at the head of each school. Instruction in Agriculture naturally predominates, since the students are drawn largely from the farms of Northern Utah and Southern Idaho.

When the writer first arrived here in the Fall of 1920, the apparent attitude of both faculty members and students towards military training was that it was a necessary evil. In the short time that I have been here, however, the attitude has been slowly changing to interest in the Military Department, and a gradual awakening to the benefits it confers upon the students and upon the institution. The President of the institution, however, has always been an enthusiast and a firm believer in R. O. T. C. instruction.

The institutional authorities have been indeed generous in placing facilities at the disposal of the Military Department. Part of the lower floor of the main building, formerly belonging to the Agronomy Department, was turned over to us and contains a Quartermaster office, a clothing issue room, a store room, and a large room 30 feet by 75 feet in which is installed a Coast Artillery laboratory, model plotting room, etc. Another large room on the lower floor, 25 feet by 75 feet, is used as an Armory where the Infantry Equipment, rifles, etc., are kept and which is used also as a gallery-practice range.

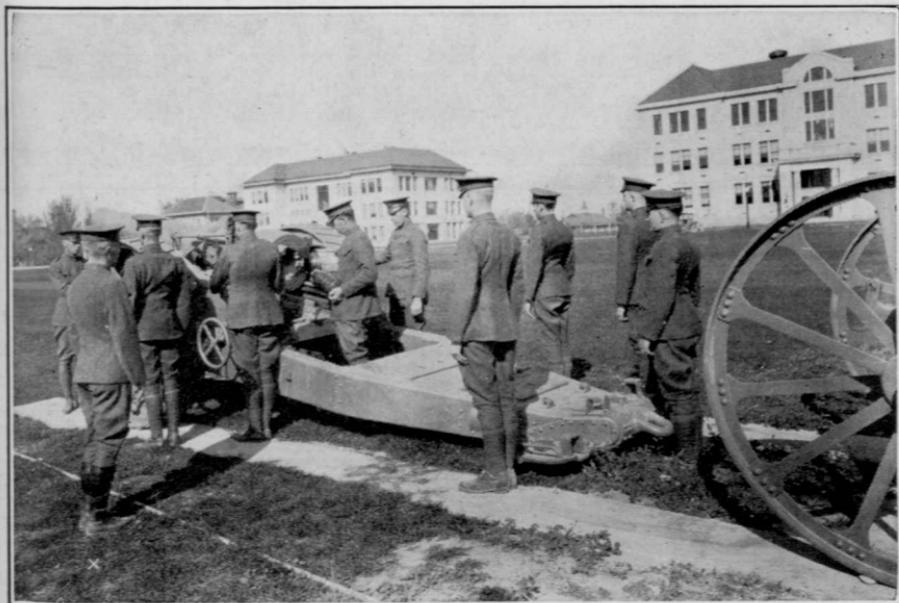
In the Agricultural Engineering building, a large room 20 feet by 20 feet is used by the acting Sergeant-Major, where the files and records of the Military Department are kept. Another office just across the hall is occupied by the Professor of Military Science and Tactics and the officer in charge of the Motor Transport unit. A class room, in the same building, seating twenty-five pupils, is used exclusively by the Coast Artillery Unit. The Motor Transport Unit has a class room in this building which is used at certain hours only.

A modern concrete garage containing thirteen stalls was erected this summer for the exclusive use of the trucks of the Motor Transport unit. A corner of the college automotive shop is used by the Coast Artillery unit for the ten-ton Artillery tractor and the Artillery Repair Truck.

For the past two years there have been three R. O. T. C. units at this institution: Infantry, Coast Artillery, and Motor Transport. During the past year the Infantry unit fell below the minimum strength required

by law, and was withdrawn, leaving a Coast Artillery unit and a Motor Transport unit.

The Coast Artillery unit was first established November 7, 1919, upon the request of Captain Stephen Abbott, Coast Artillery Corps (Retired) and the President of the Agricultural College of Utah, Dr. Elmer G. Peterson. Due to the fact that there were two other R. O. T. C. units, the size of the unit varied for the first two years between 50 and 60 students. This year, with only two units at the institution, the Coast Artillery unit has an enrollment of 120 students, 12 of whom are advanced students.



8-INCH HOWITZER DRILL—AGRICULTURAL COLLEGE OF UTAH

The Freshmen course as given here is identical for all arms and consists of practical Infantry Drill Regulations. The drill period is for three hours a week and is held every Thursday from 10 A. M. to 1 P. M. This course is identical for all classes during the Fall Quarter which begins September 12 and ends November 23.

Cadet officers are carefully selected, usually from students who are pursuing the advanced courses. The non-commissioned officers are selected through merit and ability, usually upon the recommendation of the cadet officers. It has been found that the students who have attended a Basic Summer Camp make the best non-commissioned officer material.

The cadet battalion is organized into two companies of two platoons each. A cadet major, assisted by a cadet second lieutenant as Adjutant, and two cadet captains assisted by cadet first lieutenants and cadet second lieutenants are in charge.

Competition for appointment as cadet non-commissioned officers is keen. Competition between the four platoons has been inspired by the announcement that the best drilled platoon would give an exhibition drill at the annual military ball to be held February 21, 1922. A cup will be awarded by the President of the institution to the successful platoon. At this ball, also, the Governor of the State, the Hon. Charles R. Mabey, who served as a Major of Field Artillery during the World War, will be present.

During the Winter Quarter, a basketball league composed of teams from each of the four platoons will compete. Suitable prizes have been promised to the winning team. In the Spring Quarter, a similar baseball league is contemplated.

The students of the cadet battalion are being trained towards a certain ideal. The President of the Agricultural College of Utah has donated a medal to be awarded each year to the member of the cadet battalion who most nearly represents the ideal we are striving for. This medal will be awarded in the Spring at the regular exercises when scholastic honors and awards are given.

The last hour of the drill period during the Winter Quarter and for one half of the Spring Quarter, which must be held indoors because of the weather, is devoted to lectures and demonstrations. The Freshmen receive instruction in military courtesy, hygiene, camp sanitation, orders and messages, etc.; the Sophomores are given practical instruction and demonstrations in the materiel of the arm of the service which they are studying.

Throughout the year indoor gallery practice is held, with competitions within the college, and with other colleges. In the spring, outdoor small arms practice is held.

The cadet officers conduct the Infantry training throughout the year; the Sophomores, as non-commissioned officers, assist; both groups thus having practical instruction in leadership and the handling of men.

In addition to the Infantry training, small arms firing and gallery practice throughout the year, the Juniors and Seniors attend three recitation periods throughout the year. During the Fall Quarter, the Juniors pursue a course in Minor Tactics; during the Winter Quarter, a course in Gunnery for Heavy Artillery, and during the Spring Quarter, a course in Orientation for Heavy Artillery.

The Seniors pursue a course in the Military Policies of the United States during the Fall Quarter, a course in Military Law during the Winter Quarter, and during the Spring Quarter devote the time to Gunnery Problems in the Adjustment of Fire with the Puff Board, and instruction in Motor Transportation.

From among the co-eds, five young ladies prominent in college activities, were selected by the cadet officers to serve as sponsors for the cadet battalion throughout the year. They take charge of the social

activities of the battalion, receive the review at inspections, and occupy places of honor at the annual military ball.

The battalion has been fortunate in that many students naturally selected as officers and non-commissioned officers have been students who were prominent in college activities and therefore natural leaders in college affairs. This has been instrumental in making military instruction more popular for freshmen. The cadet officers' association has this year made application for membership in "Scabbard and Blade," a national military fraternity.

Enthusiasm has shown a perceptible growth since the beginning of the year. This will undoubtedly result in an increased Advanced Course enrollment next Fall. This institution will unquestionably contribute largely to the success of the national R. O. T. C. program.

The slogan of the battalion this year is one evolved by President Peterson. "Every Able-Bodied Graduate a Reserve Officer."



The R. O. T. C. at Michigan Agricultural College

By Major Joseph J. Teter, C. A. C.



MICHIGAN Agricultural College was founded in 1857. It is the oldest Agricultural College in the United States. It is a co-educational institution with approximately one fourth the enrollment women. The courses given are Home Economics, Agricultural and Engineering. Further sub-divisions under each class are made so that the student can take a course in almost any branch of Agriculture or Engineering. Each division is headed by a dean.

The College year is divided into three terms, fall, winter and spring. The fall term opened this year October 4, 1921, and the spring term closes June 23, 1922.

Regular organized military training began in 1884 under Lieutenant D. A. Lockwood although it was authorized originally under the Morrill Act, 1862, as one of the Land Grant Colleges wherein Agricultural and the Mechanics Arts were prescribed together with military training.

In 1917 the College accepted the R. O. T. C. and agreed to require two years of military training for all physically fit male students. It started with one unit—Infantry. In 1919 two other units were added, Cavalry and Coast Artillery.

Although the Coast Artillery unit was authorized in the spring of 1919 no Coast Artillery Officer was sent here until the first of November, 1919. The usual difficulties were encountered—no equipment, no text,

no prescribed course, and no students who wanted to take the course. No actual Coast Artillery work was started until the winter term 1920.

At this time no juniors and seniors were taking the elective work and all but about one hundred sophomores had been excused from military training because they had had service in the Army. Also at that time students could not elect Coast Artillery until their second year in College. In order to get the Coast Artillery unit started the Professor of Military Science and Tactics arbitrarily ruled that all the sophomore Engineers taking military training, about fifty, would be assigned to the Coast Artillery unit. Forty-five finished the basic course.



INSTRUCTION IN MOTOR TRANSPORTATION—MICHIGAN AGRICULTURAL COLLEGE

For the College year 1920-21, seventeen juniors, sixty-five sophomores, and over a hundred freshmen started with the Coast Artillery unit. Of this number sixteen juniors, forty-seven sophomores, and seventy-two freshmen finished the year. This year (1921-1922) there are fifteen seniors, twenty-five juniors, fifty-six sophomores and 121 freshmen in the Coast Artillery unit. Most of the men who were in the Coast Artillery unit last year and are back in College this year are now in the unit. I might say right here that this is a "poor-man's college" and more than half of the students are working their own way through. Many drop out and never come back, others stay out for a year and earn enough to continue. There are ninety-one students taking the advanced course at this institution. They are distributed as follows: Infantry twenty-four; Cavalry twenty-seven and Coast Artillery forty.

The method of selecting students, or getting students to select the different units is quite different from that used in most Colleges. Since

the students in the Agricultural and Engineering division are about equal the Agricultural students are encouraged to take the Cavalry or the Infantry, and the Engineering students the Coast Artillery or the Infantry. In fact the Coast Artillery unit is limited to Engineer students. Some time during fall term the freshmen students taking Engineering courses are lined up and required to select either the Infantry or the Coast Artillery. This assigns about two-thirds to the Coast Artillery and one-third to the Infantry. The same method is used in the Agricultural divisions so each unit has approximately the same number in the basic course.

The Coast Artillery unit is organized into a battalion of two batteries for parades and ceremonies, the sophomores acting as Sergeants and Corporals and the juniors and seniors as Officers. This is more or less a paper organization for the academic schedule here is so involved that we never get them all together except for one day a week in the spring term.

One senior is appointed Cadet Major of the Coast Artillery unit. The other seniors are made Captains or First Lieutenants. All the juniors are Second Lieutenants. Of course this makes the officer end top-heavy, but it is almost impossible to get the unit together as an organization. When they are detailed as instructors over different groups they get along better. Besides, it is an added inducement to take the elective work.

The other units are organized along similar lines, a battalion of Infantry and a squadron of Cavalry, the whole forming the Cadet Corps.

The general method of instruction, except for Infantry drill in the freshmen year, follows very closely the section room method. This is easy to arrange, for as stated before the academic schedule is so heavy and involved in order to accommodate the great number of irregular students, that only a small number attend at any one hour. The number varies from about thirty in the sophomore class to as low as two or three in the senior and junior classes. This makes a great many classes and keeps all the instructors busy most of the day and Saturday mornings. There is to be a revision downward in the academic schedule and we hope to have better luck when it does come.

In general, subjects common to all arms are taught together but this is not always possible in the junior and senior classes. The freshmen are all drilled together until about the middle of the winter term, at which time they are assigned to the different units.

In the Coast Artillery unit at the beginning of each term a pamphlet is issued every student covering the work for the term. For every day it shows the lesson for that day with reference to other texts, any important data not given in the text, also questions calling attention to the important parts. When possible half of each period is made theoretical and half practical.

For instructing in plotting and fire control on a moving target, we have constructed an outdoor range. The base line is 1365 yards long. One base end station is on top of the highest building and the other on a frame tower in the field. This is connected up with the proper telephone and T. I. systems. The moving target is a truck or a man with a flag. This system creates a great deal of interest, but since the students only attend for a period of fifty minutes it takes most of the time to get them to the station and get started, so now we have built an indoor range. The base end instruments are set up in a large garage and the target slides on a wire pulled by an electric motor geared for the proper speed.



THE ARMORY—MICHIGAN AGRICULTURAL COLLEGE

The buildings assigned to the R. O. T. C. are: An Armory with a main floor sixty by ninety, four large office rooms, store rooms and basement; a large room in the basement of the gymnasium and a garage 150 by forty feet. One large office and the garage is assigned for the exclusive use of the Coast Artillery unit. The garage is steam heated, well illuminated with electric lights and has a concrete floor. It is divided into three parts; one part being used as a garage proper, and the other two as class rooms. The indoor range and plotting room are in these. Except for Infantry drill and outdoor work all the classes are held in the office of the garage.

In the Armory we have a 26 target rifle range for the 22 calibre rifle, and a four target pistol range for the 45 caliber pistol. For the pistols we use the regulation pistol target.

The Military Department is organized as all other departments, with the same rights and privileges and the same obligations. In one par-

ticular only does it differ—it is not in any one division but directly under the President of the College. On many important matters where the deans of divisions are called into consultation, the Professor of Military Science and Tactics is called into the conference. The Professor of Military Science and Tactics has full power with other Professors in faculty meetings and sits on numerous committees appointed by faculty and President.

The College allows three credits a term for the advanced military training or 18 credits for the last two years. These credits are just as valuable, if not more so, than those of any other department. At first they did not do the students in the Engineering division much good for most of their work is required work but now they are more valuable than any others. The credits given by the Military Department may now be substituted for required work which is not a prerequisite for other courses and for any back work which they may have, provided that not more than five such credits will be used in the junior year in place of required work. Just now no academic credits as such are given for the basic course, but since all the physically fit male students are required to take the basic course it does not make any difference in the number of students.

The attitude of the faculty is generally strongly favorable towards the Military Department as now administered. High standards of academic work have done much to aid us. Even those of pacifist leanings admit the efficiency of the department and the interest aroused among the students, male and female.

The student attitude has radically changed since the reaction caused by the S. A. T. C. regime. Little effort is made to evade the prescribed work and a marked increase in the number of electives shows plainly the trend of thought. Knocking has practically ceased.

Scabbard and Blade was founded here in 1914, was extinct during the war, but was reorganized in the winter of 1919. It is classed as "Honorary Society" on the campus with the same standards for admission as other honorary academic societies, i.e., high standing in the special department and among the upper third or fourth of the school.

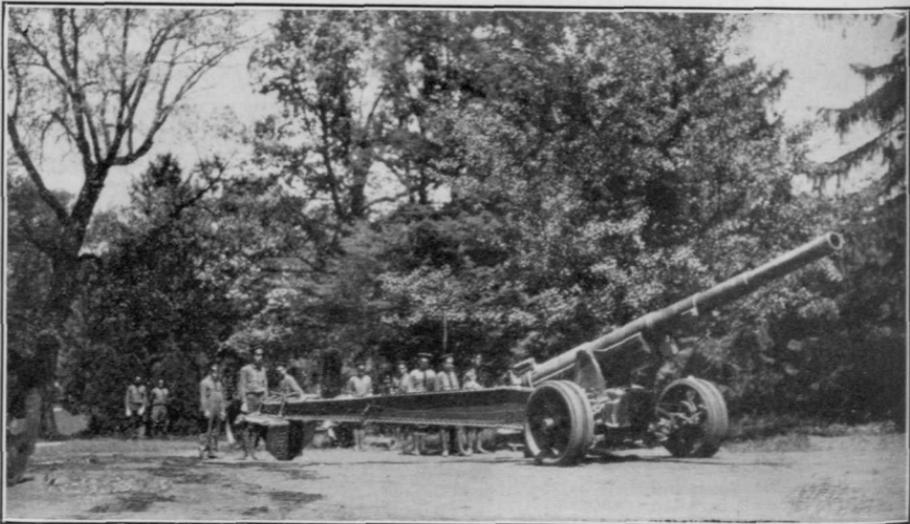
An Officer's Club to meet the needs of the elective men whose ratings are not high enough to win out in the honorary society was organized last year. Admission to the elective units is *ipse facto* the admission to the club. Regular meetings once per month, attendance required and a paper read or address given by a member of the regular staff on some topic of general interest to all. Once a year the Officer's Club puts on a military ball. This was established last year and was a big success. In the future it will be one of the biggest events of the College year.

Sponsors were tried last year and seem to create a considerable interest. Four are chosen, one for the Corps from the senior girls and one from each unit from the next two lower classes. They act as the

connecting link between the co-eds and the military, serve at military balls, decorating committees, present the colors at ceremonies, etc. Competition at election time is quite keen. It is believed that they serve a useful purpose.

The rifle club takes in close to 300 male students each year and valuable prizes which aggregate about \$200.00 are distributed. There is also a girls' rifle club with about fifty members. Rifle competitions between the units and different campus organizations take place during the winter term.

There are about twelve hundred male students in College now and the number will increase every year. Approximately six hundred students are taking military training, and the number is increasing



THE C. A. UNIT AT DRILL—MICHIGAN AGRICULTURAL COLLEGE

annually. With the new and favorable attitude towards military training and the increased respect accorded the Military Department and personnel the prospects of the R. O. T. C. look bright.

By detailing Officers on R. O. T. C. duty who have the situation well under control, who understand the College traditions and the hopes and fears of the students, a splendid spirit can be built up. Changes in personnel work the greatest injury to R. O. T. C. As Rome was not built in a day, so the College spirit of military efficiency should not be built hurriedly. Growth through fear or through penalties is not a permanent one and will fall to the ground when that officer's influence is removed. The development of love for the work is the result of years of personal contact, long hours of hard labor and must be begun in entering freshmen classes, improving each year the standards and traditions until no student will any more violate a department order than he would disregard one of the age old customs of the institution.

The R. O. T. C. at the Virginia Polytechnic Institute

By Major Forrest E. Williford, C. A. C.



ON November 28, 1916, the Board of Visitors of the Virginia Polytechnic Institute, at a meeting held in Richmond, Virginia, unanimously agreed to adopt the Reserve Officers' Training Corps at the Institute and immediately thereafter application was filed with the Adjutant-General of the United States Army requesting authority to organize one or more units of the training corps here. On December 15, 1916, President Eggleston received official notification from the War Department that the request of the Board of Visitors had been granted and that the R. O. T. C. would be established here the beginning of the second term of that year. On January 5, 1917, three units of the R. O. T. C. were established at V. P. I., namely, Coast Artillery, Infantry, and Engineers.

The primary object of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, the students at civil educational institutions for reserve officers, and the training is such as is necessary to prepare the student to perform the duties of commissioned officers in the military forces of the United States and to enable them to be thus trained without the least interference with their civil careers. It is recognized by all that military training is of great importance not only to those men who expect to make a profession of arms, but those who expect to enter civil pursuits as well. Military training teaches, first self-control; second, the control of others, which is impossible without the former; third, obedience to law and legal authority, and no citizen of our country should be without it. It is not the object of the R. O. T. C. to instill into the minds of the young men of America a love for war, or a desire for hostility against other nations, but to train and prepare them to defend their country in any time of need. One point that is kept in the minds of the students is that preparedness for war is the best guarantee for peace.

There are three units, Coast Artillery, Engineers, and Infantry. Let us now consider their direct connection with V. P. I.

All students who are citizens of the United States are eligible for enrollment in these units. Registration is purely voluntary, but having been made, is a pre-requisite for graduation. The military instruction forms regular courses for which regular college credit is given. Instruction in the R. O. T. C. is divided into two courses for each unit, namely, the basic course and the advanced course. The basic course is taken during the first two years of the college course, and the advanced

course during the last two years. The time given to military training by students in the basic course is three hours a week; the instruction during the first year being in the fundamentals of military science. In the second year the students get theoretical instruction in the particular unit to which they belong. The time given to military by men in the advanced course is five hours a week and the training consists of advanced R. O. T. C. instruction in their respective units. It is also required that students in the advanced course attend a summer training camp during the summer immediately following their junior or senior year, receiving at the camp more or less practical instruction in their branch, or unit, of the R. O. T. C., a camp being provided for each unit. The Coast Artillery unit affords instruction in coast defense, which includes the most modern branch, namely, railway artillery; the Engineer unit deals with transportation, communication, and any construction work desired by the army; the Infantry unit affords instruction in the main branch of the fighting forces of the United States. Besides the valuable military training afforded the students in the R. O. T. C., other important advantages are derived. First, the better facilities for technical instruction; second, the money compensation. The instruction of the units assigned to this institution fits in well with the instruction in other departments of the college. The heavy artillery and engineer equipment add materially to the facilities for technical instruction in the lines of engineering, applied mathematics, and mechanics. United States Army officers with technical training are stationed here and form a most valuable addition to the faculty of the college. The commutation of uniforms amounts to \$30.00 a year for freshmen and \$6.00 a year for all others. Advanced course students also get \$1.00 a day and rations and uniform while attending the summer camp. In addition to this they receive about forty cents a day commutation of rations from the beginning of the junior year to graduation, with the exception of the period spent at the summer camp. The total pay received by a student in the R. O. T. C. from the Federal Government is about \$500.00. A third important advantage offered the students in the R. O. T. C. is the commission as an officer in the Officers' Reserve Corps. The student may accept or reject this commission as he sees fit.

Membership in the R. O. T. C. has no disadvantages for the student, as it carries no obligation for military service, other than the six weeks' summer training camp. On the other hand the technical instruction is a valuable asset, the money compensation is no small advantage, and the opportunity for an officer's commission which prevents being drafted as a private soldier in time of war is one not to be despised. The fact might be mentioned that about seven hundred former students of this institution held Army and Navy commissions from brigadier-general down, during the World War, and that ninety-eight percent of the men

going from V. P. I. to the various summer training camps received commissions, including one hundred per cent for the engineers.

It might be well to give a few statistics regarding the number of men in the various units of the R. O. T. C. at V. P. I. Of all the students at V. P. I. that are eligible for enrollment in the R. O. T. C. above ninety-five per cent belong. By eligibility in this case is meant men who are physically fit for military duties. In the Coast Artillery unit there are 37 Seniors, 57 Juniors, 75 Sophomores, and 76 Freshmen; in the Infantry unit, 20 Seniors, 36 Juniors, 52 Sophomores, and 82 Freshmen; and in the Engineer unit, 37 Seniors, 34 Juniors, 52 Sophomores, and 90 Freshmen. This makes a total of 648 men in the three units at V. P. I.

Without an exception it can be stated that all of the best institutions in America have one or more Reserve Officers' Training Corps units, and some have six or seven. It is probably the greatest movement on foot in this country to-day, and if "carried on" will be the means of making this country a safer and better country to live in, and a country full of men who are not only ready to defend their country's honor, but are also prepared to do so.



The R. O. T. C. at the Mississippi A. & M. College

By Captain Kenneth S. Purdie, C. A. C.

N February 13, 1919, President William Hall Smith of the Mississippi A. & M. College initiated a request to the War Department for the establishment of a unit of the Coast Artillery R. O. T. C. at this institution. Post-war conditions, however, both at the College and in Washington, delayed the actual organization of the unit until October 8, 1919, when an officer of Coast Artillery was detailed for duty therewith. At the present time the official organization of the unit is as follows:

Major Stewart O. Elting, C. A. C., (D.O.L.)

Professor of Military Science and Tactics and Commandant of Cadets.

Captain Kenneth S. Purdie, C. A. C., (D.O.L.)

Assistant Professor of Military Science and Tactics, in charge of Coast Artillery unit.

Staff Sergeant G. A. Nowlin, C. A. C., Detachment Sergeant Major.

Staff Sergeant C. C. Lemmond, C. A. C., Assistant Instructor.

Sergeant P. Ahearn, C. A. C., Assistant Instructor.

Private 1st Class C. H. Palmer, C. A. C., Mechanic.

In general, the conditions met in the organization of the unit were similar to those existing in other land-grant schools. The Military Department owes its original establishment to the terms of the Morrill Act of 1862 thru which the college is related to the Federal government by an act of the State Legislature approved February 28, 1878. The prestige of the military feature was greatly enhanced by the selection of Stephen D. Lee, a graduate of the United States Military Academy and a lieutenant-general in the Confederate Army as the first president of the college. On October 6, 1880, he opened the doors to students and from that time the school has enjoyed continuous growth and prosperity—a condition due largely to the soundness of the conception of its fundamental usefulness, to liberal appropriations from the State and Federal governments, and to the fact that its courses of instruction are of very special value in a state essentially agricultural in its economic interests.

The college now includes the following schools whose enrollment at the opening of the academic year 1921-1922 was as indicated:

Agriculture.....	423
Engineering (Civil, Electrical, Mechanical, Architectural, Agricultural and Industrial).....	250
Science.....	106
Business and Industry.....	137
	916

Since the state of Mississippi maintains an excellent college for its young women, this institution is not co-educational. In addition to the above, there are 519 ex-soldier students undergoing vocational rehabilitation at government expense; they do not, however, come within the obligations of the Morrill Act and are not quartered in the student barracks, but are required, nevertheless, to wear the regulation college uniform at all times.

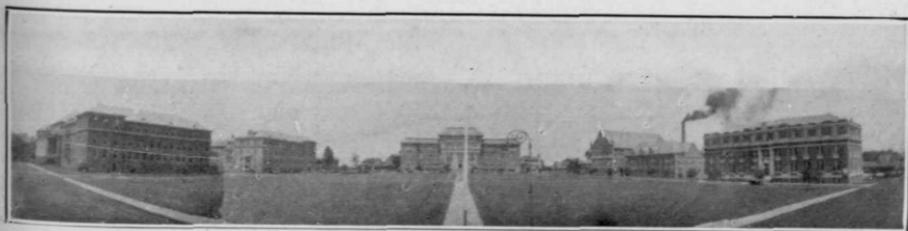
There are two units of the Senior Division of the R. O. T. C. established at the College, Coast Artillery and Infantry, membership in the Coast Artillery unit being limited to students enrolled in the School of Engineering; on matriculation, these students are automatically enrolled in that unit. Since its establishment, the strength of the Coast Artillery unit has been as follows:

Class	1919-1920	1920-1921	1921-1922
Freshman	46	39	99
Sophomore	32	31	38
Junior	12	22	27
Senior	0	9	18
	90	101	182
Total	90	101	182

The military organization is a regiment of three battalions of which

one is composed of Coast Artillerymen. Student officers are in charge thruout. All students, including Vocational Rehabilitation, are required to wear the olive drab government regulation uniform at all times; and all students, except the Vocational Rehabilitation, are required to live in the student barracks under military control and supervision. The disciplinary control of the student body is directly in the hands of the Commandant of Cadets who is also the Professor of Military Science and Tactics. It may thus be seen that the college approaches closely the essentially military in its organization.

It cannot be said, however, that the military features of the college curriculum have ever attained what is nominally known as popularity with either faculty or students; but the advantages accompanying the Morrill Act have mitigated to toleration what might have been antagonism, and if the present governmental liberality in appropriations and equipment for the R. O. T. C. is continued, a considerable degree of actual popularity will doubtless be attained. This condition is not



THE CAMPUS—MISSISSIPPI A. AND M. COLLEGE

peculiar to this college—it is undoubtedly equally true in varying degrees of all land-grant schools. There are at least two very definite factors that have militated against the popularity of the military features. The first is the scarcity of equipment and facilities for instruction that was the rule rather than the exception before the organization of the R. O. T. C. In many instances, the instruction given under the Morrill Act was limited perforce to the most elementary Infantry training.

A second factor of equal importance was the custom of delegating the disciplinary control of the student body to the Military Department, thus removing a disagreeable burden from the shoulders of the military authorities. In many instances, it may have been an entirely satisfactory arrangement, but the result has unquestionably been to fix in impressionable student minds a picture of the Army as the source of harsh disciplinary administrators rather than of instructors and leaders. With the assignment of additional officers to colleges having R. O. T. C. units, the creation of this situation has at last been discontinued, and now, instead of being forced into the position of an aloof disciplinarian, the Army officer may take his proper position as an instructor.

Another factor of more recent development is the popular attitude

toward things military remaining after the Great War. When this unit was established in 1919, the reaction against anything savoring of the military was strong, particularly among the many students who had been in the service. With the gradual departure of these students from college and a determined effort on the part of the Military Department to emphasize the more practical phases of the training, this reaction has greatly decreased. The discussion incident to the formation and deliberations of the Conference for the Limitation of Armaments, however, has produced an attitude of futility toward the military training that even an increased emphasis on its civil value finds it difficult to overcome. Nevertheless, the policy which it is believed the Coast Artillery unit can continue to pursue with greatest prospect of success is the demonstration of the value of its training in civil as well as in military life.

EQUIPMENT

During its first year practically no equipment was delivered by the War Department for the use of the unit. Instruction was purely theoretical from standard texts obtained from the Coast Artillery School. The following equipment is now on hand:

One 8-inch Howitzer and accessories; one 10-ton Tractor and accessories; one $1\frac{1}{2}$ -ton Truck; one Artillery Repair Truck and accessories; miscellaneous fire-control equipment suitable for demonstration purposes.

FACILITIES FURNISHED BY THE COLLEGE

The institution is not a rich one and cannot undertake elaborate special construction. The general building program now under way, moreover, has cramped temporarily the facilities of all departments, but the Coast Artillery unit has always been supplied with classroom space and a temporary building of wooden construction for housing its equipment.

COURSES OF INSTRUCTION

Instruction in the subjects enumerated in letter A.G.O., July 24, 1920, is given, distributed by class as indicated below:

Course	Hours of Instruction in each Class			
	Freshman	Sophomore	Junior	Senior
Administration	2	..	..	12
Military Courtesy	6	..	..	6
Physical Training	18	18	18	18
Military Hygiene	6	..	..	6
Military Law . . . . .	..	..	..	12
Military History . . . . .	..	..	..	12
Infantry Training	52	30	30	30
Artillery Materiel	18	18	24	18
Gunnery . . . . .	..	12	36	24

Course	Hours of Instruction in each Class			
	Freshman	Sophomore	Junior	Senior
Orientation..... ..		18	24	12
Motor Transportation.....	6	12	24	12
Field Engineering..... ..		..	6	6
Employment of Artillery....		..	18	12
Total..... ..	108	108	180	180

CO-OPERATION WITH OTHER DEPARTMENTS OF INSTRUCTION

The War Department has indicated at various times that it is desired that co-ordination with other departments of instruction be secured whenever possible. Up to this time, Motor Transportation is the only subject which has been handled in this way. All theoretical instruction in that subject is given by the automotive department of the college which is fully equipped with laboratories for the work; practical driving instruction is given by the unit.

ACADEMIC CREDIT FOR MILITARY SUBJECTS

The unit of academic credit established by the college is the credit-hour, which is defined as one lecture-hour per week per semester or two laboratory-hours per week per semester. There are two semesters per year, Fall and Spring. One hundred and sixty credit-hours are required for graduation.

No academic credit in terms of credit-hours is given for work in the Basic R. O. T. C. Course, pursued normally during the Freshman and Sophomore years; the completion of this course, however, is a pre-requisite for graduation.

In the Advanced R. O. T. C. Course, pursued normally as an elective during the Junior and Senior years, three credit-hours may be obtained per semester, or a total of twelve credit-hours for the course. This is as much academic credit as is given in any course in any department of the college.

PAYMENTS TO CADET OFFICERS FROM COLLEGE FUNDS

In order to compensate those students who are selected to assume the responsibilities and duties of cadet officers, the college has established the following scale of pay:

1 Cadet Lieutenant-Colonel.....	\$25 per month.
3 Cadet Majors.....	15 per month each.
12 Cadet Captains.....	12 " " "
1 Cadet Regimental Sergeant-major....	12 " " "
12 Cadet First Sergeants.....	8 " " "
2 Cadet Regimental Supply Sergeants..	7 " " "
8 Cadet Buglers.....	8 " " "

In an institution where the majority of the students are more or less dependent upon funds secured through their own efforts, the payments indicated are of considerable assistance to the efforts of the Military Department.

PROSPECTS FOR THE FUTURE

After two years of operation there does not seem to be any question concerning the continued growth and prosperity of the Coast Artillery R. O. T. C. Unit at the Mississippi A. & M. College, providing a continuation of the present policy of the War Department may be expected. It is, of course, understood that that policy is directly dependent upon the attitude of Congress and the Executive; but it is equally certain that the expenditure of government funds for this purpose will be favorably regarded by tax-payers with college-going sons.

It is not necessary to enumerate here the evident advantages of the R. O. T. C. to this college and its students. It may be stated, however, that they are rapidly becoming more widely appreciated by students and parents, and, more slowly, by faculty members. In this particular section of the country, the money compensation is a matter of very great importance; secondary only to that is the opportunity offered to attend a summer camp such as that at Fort Monroe. It may be further stated that the measure of the popularity and acceptability of the unit is directly dependent upon the practical usefulness of its training, over and above the military value for which it is designed.

As to any returns to the War Department commensurate with the expenditure involved, it is believed that they are measurable and will become increasingly so as the unit attains stability and as its graduates pass into the reserve. By no means the least of the advantages to be obtained is the gradual approach by students and observers to an understanding and appreciation of the contributions of military training to education in general when properly directed and adequately equipped. Before the establishment of the R. O. T. C. on its present basis a favorable impression upon the public was practically impossible of attainment; if the present scope of the work is continued and the necessary personnel and equipment maintained, each year should see a marked improvement in its prestige and usefulness.





EDITORIAL

The R. O. T. C. and the Coast Artillery

OR many years a certain amount of military instruction has been imparted to the students of some of our colleges by officers detailed from the army and with the cooperation of college authorities. However, nearly all of this military instruction has pertained to the Infantry arm of the service. It remained for the post-war rehabilitation of the Reserve Officers Training Corps to secure the general inauguration of Coast Artillery Training in the colleges. The Coast Artillery itself, and the faculties, administrative officials, and students of colleges and universities wherein are established Coast Artillery R. O. T. C. Units, all share in an interest in the enterprise, and have a right to know what has been accomplished, what difficulties stand in the path of future progress, and what promise the future holds. The effort of this number of the JOURNAL is to present the sort of composite picture of the Coast Artillery R. O. T. C. as will help to answer some of these questions.

To the regular Coast Artillery officer who is not now connected with the R. O. T. C.—just a word. Every page of this issue is as much for you as for any R. O. T. C. Instructor, college professor, or student. Some day you will be detailed for R. O. T. C. duty. Furthermore you and the rest of the Coast Artillery will some day depend upon the commissioned product of the R. O. T. C. The Coast Artillery R. O. T. C. is now, in law and in fact, a part of the Coast Artillery. For all of these reasons you **need** to know the actual situation on this part of our front. Through the painstaking cooperation of your forward observers—the Coast Artillery officers now on R. O. T. C. duty, you have assembled here an up-to-the-minute bulletin of military intelligence, a composite report of the varied conditions as they exist today. A careful perusal of all these reports will afford you the basis for an estimate of the situation which almost inevitably will presently stand you in good stead.

Based upon the most interesting, if arduous, experience of a college detail at a state university, it is desired to add one thought to the many expressed elsewhere in this issue. Ultimate success in the prosecution of R. O. T. C. development hinges absolutely on the recognition by the War Department and everyone else connected with R. O. T. C. work, of the cardinal principle that in collegiate activities, academic standards and sanctions must prevail. These standards are molded by tradition, and while their expression varies in different institutions, yet their fundamental

bases of method and ideals are so well understood that a college professor lives in the same professional atmosphere no matter how often his elevation from chair to chair may shift him from college to college. The army officer, who moves from post to post, each with its peculiarities of administration, yet all conforming to a traditional code, should have no difficulty in recognizing the existence of the academic code, and should readily yield homage to it. And so it is asserted that the R. O. T. C. must develop in strict conformity to the peculiar conditions of college life. No matter how welcome an R. O. T. C. unit may be in any college or university, yet essentially is it an alien. Like any other aliens seeking adoption in a new home, harmony and understanding can develop only after the newcomer shall have acquired the attitude and characteristics of his new surroundings, and always the alien himself has most to gain by conformity and most to lose by clinging to his foreign traits. The R. O. T. C. project presents just one of many illustrations of the fact that our military system cannot be an unbending code, but must adapt itself to many environments. With the vision of broad-minded accommodation, the R. O. T. C. will serve democracy well, in assuring for the emergency of war, the continuance of the cardinal democratic principle necessary to the life of peace, that they who share more richly than their fellows in the benefits of education, do so not for their own aggrandizement, but that they may be fit to serve their fellows as the leaders of democracy.



Scabbard and Blade

This R. O. T. C. number would not be complete without mention of Scabbard and Blade, the national, honorary, military college fraternity. This society was founded by cadet officers at the University of Wisconsin in the academic year 1904-1905, and by 1921 was represented by local units, called "Companies," in twenty-eight colleges and universities, with a total membership, undergraduate, alumni, and honorary, of 2470. The significance of this society to college life, to the R. O. T. C., and to the nation, may be inferred from the preamble to the Constitution of the society:

"Believing that military service is an obligation of citizenship, and that the greater opportunities afforded college men for the study of military science place upon them certain responsibilities as citizens, we, Cadet Officers in various Universities and Colleges conferring baccalaureate degrees, do form this Society and adopt this Constitution in order to unite in closer relationship the military departments of American Universities and Colleges; to preserve and develop the essential qualities of good and efficient officers; to prepare ourselves as educated men to take a more active part and to have a greater influence in the military affairs of the communities in which we may reside; and above all to spread intelligent information concerning the military requirements of our country."

Membership in Scabbard and Blade is limited to selected cadet officers in the military organizations of colleges giving military instruction, except that the President and Commandant of Cadets at a college maintaining a "Company," and Federal Inspectors, may be elected by the members of a Company to honorary membership, and with the approval of the headquarters organization of the society, other desirable persons may be elected to honorary membership. Thus it occurs that there are a considerable number of regular army officers carried on the Scabbard and Blade rolls, either as alumni or honorary members.

As might be expected of an intercollegiate society, Scabbard and Blade is secret in character, with its distinctive obligations and ritual. Perhaps through this fact it has been possible for the society to exert a distinct influence on the stimulation of a high standard of conduct among the cadet officers at each college where a company of Scabbard and Blade has been installed. In certain colleges where both Juniors and Seniors are selected to be cadet officers, it is the rule to defer elections to Scabbard and Blade until the Juniors shall have served a half-year as cadet officers, and thus have been given an opportunity to demonstrate their fitness as cadet officers, and their consequent desirability as members of the society.

The record of Scabbard and Blade has been such as to justify confidence in it, and encouragement of its future activities. Any Coast Artillery officer on R. O. T. C. duty may welcome the honor and privilege of election to honorary membership, for the distinctive association thus afforded him with the best elements of the undergraduate personnel who are supporting military training will present him with a peculiarly intimate and happy opportunity for inculcating high ideals and a cohesive sense of responsibility, reacting to the benefit of the R. O. T. C. and to an understanding sympathy with the military service.



Tau Nu Tau

At the close of the R. O. T. C. camp held at Fort Monroe, in 1920, a second national college military fraternity was founded. Membership is only limited to students taking the advanced course in any R. O. T. C. unit. Accordingly, it is considered that it should not conflict with Scabbard and Blade.

The purposes of this organization are the dissemination of military information, the inculcation of keener interest in military affairs among the students, and the promotion of good fellowship. The discussions at its meetings are largely given over to military topics. Its real value lies in its being a democratic organization, membership not being limited to a small percentage of the students enrolled in military courses. Chapters have already been formed at Washington University, St. Louis and at the New Hampshire College.



THE BULLETIN BOARD

Something Worth While

The problem of arousing the interest of the civilian population in artillery affairs has been happily solved during the past year at Fort MacArthur. The Progressive Business Club of Long Beach, Cal., was the pioneer in this new movement. In the early spring, it invited the commanding officer at Fort MacArthur to deliver an address on the subject of artillery at one of its regular weekly meetings. In the course of his talk, Colonel Hatch discussed the relative functions of the Coast Artillery and the Navy in coast defense and then described briefly some of the methods used by the Coast Artillery. Upon the adjournment of the formal meeting, many questions were asked and the members of the club pressed the speaker for further, more detailed discussion of the general problem as well as its application at the fort close by. Consequently, one evening a week was devoted to these subjects until the members of the club requested that they be formed into a class and be given detailed instruction in all duties pertaining to the service of a battery so they could be in a position to assist, if necessary, in manning the Coast Defenses in case of an emergency. Many of these men are too old to enlist in the mobile Army in time of war and practically all of them have large business interests, but they are the type of men who would be anxious to do their bit in case of emergency. They saw in this proposition an opportunity to be of very valuable service in the Coast Artillery in the defense of their own harbor in case of necessity.

From this time, the meetings and lectures were held at Fort MacArthur and instruction was begun on the fire control apparatus. Meantime, the news of this undertaking spread rapidly to the nearby cities, and Colonel Hatch was in great demand to spread the gospel to their Chambers of Commerce and other commercial bodies. Following his talk, Colonel Hatch would extend an invitation to the members of the body to visit his Coast Defenses and to witness a demonstration of the materiel. In most cases, this was accepted, one club from Los Angeles having seventy-five members present to witness target practice.

The Progressive Business Club invited some others, not members, from nearby cities to join the class and shortly there was an average attendance of fifty business men undergoing instruction at the fort every Thursday evening. They developed as good a fire control section as is found ordinarily in regular manning details. Work then progressed to the service of the piece at which they proved equally efficient, a Presbyterian minister proving expert on the breech.

Authority to expend the regular allowance of subcaliber and service ammunition was granted and the subcaliber ammunition in particular was used profitably. A very satisfactory service practice was held though the weather conditions were quite unfavorable and it was considerably delayed by the fog.

The work of this class continues with unflagging interest. It is now prepared effectively to man a battery in emergency. While that feature is valuable to the government as increasing the efficiency of the Coast Defenses, greater value lies in the increased knowledge of coast defense methods and the stimulated interest

in the Army in general. The entire population of Long Beach has now a better knowledge of the problems confronting the Coast Artillery and also has adopted Fort MacArthur.

The civil authorities of all the nearby cities have cooperated wholeheartedly. Among the activities they have fostered is the preparation of a *Land Firing Map* of the entire area within range of the 12-inch mortars of the fort.

This work has stimulated military interest to such an extent that a National Guard company has been organized in Long Beach and has been given Federal recognition in the last few weeks.



Backing Up the Rifle Team

At the time of closing this issue of the *JOURNAL*, the following subscriptions have been received for the Coast Artillery Rifle Team Fund, 1922. The acknowledgements are made in the order of receipt in the *JOURNAL* office.

SOURCE OF DONATIONS	AMOUNTS
Office Chief of Coast Artillery.....	\$ 6.50
Coast Defenses of Chesapeake Bay.....	13.50
1st Anti-Aircraft Battalion.....	6.50
Coast Defenses of Savannah.....	1.50
Lieut. Col. H. J. Watson, C. A. C.....	5.00
Coast Defenses of Pensacola.....	8.50
Coast Defenses of Galveston.....	9.00
Major Fred H. Smith, C. A. C.....	.50
Hdq. 2nd Coast Art. District.....	1.00
3rd Anti-Aircraft Battalion.....	6.50
Coast Defenses of Portland.....	21.00
Major General Charles J. Bailey.....	.50
Colonel F. K. Fergusson, G. S.....	.50
Brigadier General Frank L. Winn.....	.50
Lieut. Col. R. H. Williams, G. S.....	.50
Major G. P. Hawes, Jr., C. A. C.....	.50
Major F. E. Cannon, C. A. C.....	.50
Major Louis Craig, C. A. C.....	.50
Major A. G. Frick, C. A. C.....	.50
Captain J. H. Gilbreth, C. A. C.....	.50
1st Lieut. J. H. Fonvielle, C. A. C.....	.50
Major J. S. Pratt, C. A. C.....	.50
1st Lieut. J. J. Johnson, C. A. C.....	.50
Captain G. W. Morris, Sig. Corps.....	.50
C. D. of Narragansett Bay and New Bedford.....	17.00
Camp Eustis.....	44.57
1st Lieut. E. P. Jolls, C. A. C.....	1.00
1st Lieut. L. Y. Hartman, C. A. C.....	1.00
Hdq. Coast Artillery Training Center.....	8.00
Instructors and Student Officers Coast Art'y School.....	74.50
Coast Defenses of Boston and C. A. Training Co., 1st Corps Area.....	25.00
Major Quinn Gray, C. A. C.....	.50
Total.....	\$257.57

It is apparent that with the receipt of \$257.57 within twenty-three days of the mailing of the January JOURNAL, the Coast Artillery is determined to back up its Rifle Team this year. At this rate the report in the March JOURNAL may very likely show the completion of the \$600.00 subscription desired.

One thing more—*get your rifle shots spotted and started in training for the try-outs.* The best we have are needed this year.



Massachusetts a C. A. Old-Timer

A Letter from Captain Caleb West, C. A. C. Mass. N. G.

To the Editor, JOURNAL OF THE UNITED STATES ARTILLERY.

In the January 1922 issue of the JOURNAL there appeared an article by Major General George C. Rickards in which he states,—“Prior to the passage of the Dick Bill, each state developed its National Guard in accordance with its needs and certain controlling local conditions. Since the states had no coast defenses, there was no need for Coast Artillery troops. Even after the passage of the Dick Bill, the seaboard states took very little interest in coast defense problems for some time. However, in 1906 a beginning was made and a few of the States organized what was then known as Heavy Artillery, the designation being changed to Coast Artillery in 1907.”

I think that if General Rickards will refer to the official records of the War Department, he will find that as early as 1892 (14 years previous to the time mentioned in his article) that Massachusetts has had continuously a Coast Artillery Regiment of twelve companies, who at all times were under the instruction of Regular Army Officers.

The writer was in 1892 a member of Company B First Regt. Inf. Massachusetts Volunteer Militia, and he well remembers spending from August 7th to 13th with the rest of the Regiment at Fort Warren, where he received his first knowledge of Heavy Artillery, under the instruction of First Lieutenant Erasmus M. Weaver (who later became Major General and Chief of Coast Artillery). At that time the primary armament of Fort Warren consisted of a few muzzle loading 8-inch converted rifles.

The records on file at the State House in Boston indicate that on July 1st, 1892, the First Regiment Infantry was detached from the First Brigade and assigned to take up Heavy Artillery, and in accordance with authority from the War Department, had their annual tour of duty at Fort Warren, Mass. The Regiment still known as the First Regiment Infantry continued its study of Heavy Artillery and each year spent its annual tour of duty at Fort Warren until June 1st, 1897, when it was, by act of the Massachusetts Legislature, officially changed to the First Regiment Heavy Artillery, the Companies being changed to Batteries. In 1905, in order to conform with the organization of the United States Army, the Regiment was again changed from 1st Heavy Artillery Massachusetts Volunteer Militia to Coast Artillery Corps Massachusetts Volunteer Militia, which organization is in force today and known as the First Coast Defense Command, Coast Artillery Corps, Massachusetts National Guard.

During the Spanish War the entire Regiment was on duty at various forts throughout New England, being mustered into the United States Service on May 9th, 1898, although they had been in camp at Fort Warren under State orders since April 26th, 1898.

From the records on file at the State House, Boston, Mass., it is indicated that Massachusetts has had a Coast Artillery (or Heavy Artillery) organization of twelve companies continuously from June 1892 up to the present date and that the writer of this article has served in the organization since that time.

(Sgd.) CALEB WEST, Capt., C. A. C., Mass. N. G.

The General Service Schools

WAR DEPARTMENT
The Adjutant General's Office

Washington, January 5, 1922.

From: The Adjutant General of the Army.

To:

Subject: Policy governing selection of student officers for the General Service Schools.

1. The following policies governing the selection of student officers for the General Service Schools are announced:—The students for the School of the Line will be selected by the Personnel Bureau, office of The Adjutant General, and for the General Staff School and the Army War College by the Assistant Chief of Staff, G-1.

1. (a) *The School of the Line.* (combatant branches).

(1) All candidates shall be graduates of the Special Service School of their arm or shall have had an "equivalent training," this "equivalent training" in each case to be determined by the chief of branch concerned.

(2) All candidates shall be of field grade.

(3) The class shall consist of:

60% thirty-eight (inclusive) years of age and under.

40% thirty-eight (exclusive) to forty-eight (inclusive).

(4) Officers between the ages of 45 and 48, both inclusive, shall have an efficiency rating of at least "above average." All others to have a rating of at least "average." All to be recommended by the chief of branch concerned as possessing the necessary qualifications for entry into the School.

(5) The basis for determining the percentage of officers from each combatant branch shall be the number of field officers commissioned in each combatant branch of the service.

The School of the Line. (non-combatant branches).

On the recommendation of the chiefs of branches concerned, officers qualified as in (a) above, in numbers not exceeding those indicated in table below, shall be detailed annually from the non-combatant branches to attend the School of the Line:

Quartermaster Corps.....	4
The Judge Advocate General's Department.....	2
The Finance Department.....	2
The Medical Department.....	4
The Ordnance Department.....	4
The Chemical Warfare Service.....	2
	—
	18

For the year 1922-1923, due to strength of the present class in the School of the Line—the allotment of the non-combatant branches will not exceed:

Quartermaster Corps.....	2
The Judge Advocate General's Department.....	1
The Medical Department.....	2
The Ordnance Department.....	2
The Chemical Warfare Service.....	1
	—
	8

(b) *The General Staff School.* (Combatant and non-combatant branches.)

Students for the General Staff class other than graduates of the current Line class shall not exceed ten in number and shall be detailed:

1st. From graduates of previous classes, School of the Line, recommended by their Chief of Branch, and who have been specifically recommended for such detail at the time of graduation by the Commandant, but who were not permitted to attend the General Staff School at that time because of inadequate accommodations.

2nd. From graduates of previous classes, School of the Line, who, while not having been specifically recommended for such detail by the Commandant, have, since graduation, clearly demonstrated by their records that they are fully qualified for further instruction in command and general staff duties and who are for that reason recommended by their Chief of Branch.

(c) *The Army War College.* (Combatant branches).

All candidates shall be graduates of the General Staff School who have been recommended for this detail by the Commandant, The General Service Schools, Fort Leavenworth, Kansas; officers on the "Initial General Staff Eligible List"; and other officers whose suitability for higher training in command duty has been fully established by their work in the Army, and who are not over 52 years of age.

The Army War College. (non-combatant branches).

At the discretion of the chief of the branch concerned, officers not in excess of the numbers given in the following table, shall be detailed annually from the non-combatant branches to attend the Army War College:

The Quartermaster Corps	2
The Adjutant General's Department.....	1
The Inspector General's Departments.....	1
The Judge Advocate General's Department.....	1
The Finance Department.....	1
The Medical Department.....	2
The Ordnance Department.....	2
The Chemical Warfare Service.....	1
—	
Total.....	11

Any officer so detailed to have not less than 15 years' commissioned service and a rating of at least above average.

2. General Instructions.

(a) The School of the Line and the General Staff School.

The Commandant will include in his report the names of all students who are recommended for further instruction. The recommendations will be based on the merits of individual students and should not be influenced by efforts to keep the number at any particular percentage of the graduating classes. If the number exceeds 50%, that percentage will be the *minimum* actually detailed from the current class. The question as to whether more than 50% shall be detailed for further instruction will be decided by the War Department after a survey of the situation each year and with due regard for the interests of the service.

(b) All concerned in making recommendations and selections of officers to attend any of the General Service Schools, or for advancement from one school to another, should be guided by the principle that details to these institutions are to be considered purely in the nature of an investment on the part of the Government. Such a detail or advancement is not in any sense a reward for past efficiency, or to give an officer a variety of service. The question is entirely one whether the officer is young enough and has shown enough professional interest, activity, and capacity in his past service to make it worth while for the Government to further educate him.

(c) When called for by a Commandant of a General Service School, the efficiency records, or digest thereof, of all student officers, will be taken to the particular school by a representative of the Personnel Division, War Department

General Staff, for consideration in connection with the reports and recommendations to be submitted at the close of the school work, and as respects the School of the Line, for consideration by the school authorities in conjunction with class standing to determine which officers are best qualified for advancement to the General Staff School.

3. *Instructions governing detail to the 1922-23 Classes.*

As long as the capacity of the Schools, Fort Leavenworth, Kansas, remains at 275, the student personnel at the General Service Schools shall be divided approximately as follows:

The School of the Line.....	180
The General Staff School.....	95
(a) From current class The School of the Line (if qualified).....	90
(b) As provided in Section I (b) hereof upon recom- mendation of Chiefs of Branches	5 95
The Army War College	65
(a) From current class General Staff School (if qualified).....	50
(b) From non-combatant branches.....	11 in addition to (a)
(c) Under (c) Section I above, upon recommendation of Chiefs of Branches.....	4 65

Due to the fact that the 1921-1922 class, School of the Line, is over the number authorized above, details of student officers for the 1922-1923 classes will be as follows:

The School of the Line.....	168
The General Staff School.....	107
(a) From current class, The School of the Line (if qualified).....	97
(b) As provided in Section I (b) hereof upon recom- mendation of Chiefs of Branches	10 107
The Army War College	
(a) From current class General Staff School (if qualified).....	50
(b) From non-combatant branches.....	7 in addition to (a)
(c) Under (c) Section I above, upon recommendation of Chiefs of Branches	8 65

The exact number of students of the current class, School of the Line, to attend the General Staff School, and the exact number of students of the current class, General Staff School, to attend the Army War College cannot be determined in advance.

Recommendations covering the General Staff Schools, item (b), and The Army War College, item (c), will be submitted by Chiefs of Branches and the final selection will be made by the War Department.

2. In accordance with the foregoing policies, orders will be issued on or about April 1, 1922, covering details of student officers to the School of the Line.

3. If any of the branches are unable, for any reason, to furnish their full quotas of student officers, School of the Line, 1922-1923 courses, the shortage shall be apportioned and detailed from the other combatant branches in accordance with the relative number of field officers commissioned in each of the combatant branches.

By order of the Secretary of War:

Robert H. Dunlop,

Adjutant General.

BOOK REVIEWS

The Influence of the Sea on the Political History of Japan. By Vice-Admiral C. A. Ballard, R. N. New York. E. P. Dutton & Co. 1921. 5¼" x 8¾". 311 pp. 10 maps and diagrams. Cloth. Price \$7.00.

This is a particularly timely book in these days when attention is so fixedly riveted to international affairs in the Western ocean. Generally but little thought has been given to this subject though the conspicuous naval successes of the Japanese in 1904-5 are well remembered and, to a lesser extent, are their activities in 1894 against the Chinese. But it has remained for Admiral Ballard to prepare a concise account of the influence of the sea as it has affected the political history of Japan, bringing it up to the present from their earliest historical period.

The account is devoted quite largely to the militant activities of the navy but the development of the merchant marine is not entirely neglected. Much has been written hitherto of the military and naval history of Japan but it is here set forth briefly in such manner as to stress the influence caused by her being an island empire. Her social, political and industrial advancement is closely associated with her naval progress and here again, the manner in which they have been affected by the surrounding sea has been set forth. From this, one obtains clear insight into the progressive nature of the Japanese.

The important naval actions in which Japanese have participated are briefly described; each is accompanied by a sketch of positions; and a general outline map of Japan and the nearby continent is bound under the back cover. Officers will do well to read this book and it will furnish them much ground for thought.

Modern Democracies. By Viscount Bryce. New York. The Macmillan Company. 1921. 6" x 9". 2 Vols. Price \$10.50.

The idea of writing this book came to Lord Bryce some years ago at a time when schemes of political reform were being discussed in England. At this time, references to existing democratic institutions were vague and indefinite. As a result of this and in the belief that someone should provide a substantial source for reference on these subjects, the author undertook a systematic study of existing democracies in an endeavor to determine their actual methods of working, their virtues and defects, and to compare the one with the other. His stupendous task took him on extended trips continuing through many years and during this time he revisited these countries. The book was partly written during 1914 but interruptions due to the war caused its delay in publication until April, 1921.

The subject is presented under three subdivisions. Part I deals with considerations applicable to democratic government in general and serves as an introduction to the second part which is devoted to a discussion of certain modern democracies in their actual workings. In this part, one chapter deals with the republics of antiquity, another with those of Latin America, while the remainder, the bulk of the part, is divided about equally among the six democracies most thoroughly studied; France, Switzerland, Canada, Australia, New Zealand and the United States. Having dealt at considerable length with these countries, Part III consists of comment and criticism based on the facts brought out in the previous study and brings out the author's conclusions on the present and future of democratic government.

Discussion of Great Britain was purposely omitted as Lord Bryce considered that no citizen of that country who has taken part in its politics could treat the subject as an impartial critic. No consideration is taken of the newer democracies that have been formed since the World War due to their short tenure and the experimental period through which they have been passing. The Central American

republics are not included as they are not considered democracies under the definition laid down by the author.

Little political theory is set forth and the book contains little history and only so much description of governmental machinery as is necessary to bring forth the underlying principles. American students will be interested principally in the estimate of democracy in the United States now as compared to that of 1888 as set forth in *The American Commonwealth*, and in the conclusions reached as to the future of democracy. The present study may be said to be a treatment of the democracies of the world as *The American Commonwealth* was a discussion of the governmental institutions of the United States. The book is a treasury of valuable information on the customs, laws and actual working of democracies in the six countries discussed, and will long remain as the most complete and instructive study of the world's political evolution toward democracy.

Gallipoli Diary. By Sir Ian Hamilton. New York. George H. Doran Co. 1920. 5¾" x 9". 2 vol. 748 pp. 20 ill. 3 maps. Cloth. Price \$10.00.

Though somewhat tardy in bringing this work to their attention, the reviewer feels that it should be brought prominently to the notice of JOURNAL readers. When one takes up a soldier's diary, he hardly expects to find at once an excellent literary work and a concise record of events. Each has its particular appeal, the whole making most fascinating reading. Not alone does this diary bring out the incidents of the landing on the Gallipoli Peninsula and its occupation but of far greater interest is the author's depiction of the British leaders of the period, Kitchener, Churchill, Asquith, and of the principal officers of the expedition. Sir Ian shows rare insight into the character and qualifications of men. His analysis of the ability to do big things of the officers whom he discusses was proven correct by the later events of the World War.

The author states his reason for keeping this diary as the certainty of his being called before a Royal Investigating Committee at some time after the completion of his task. Past experiences of the same nature had proven the desirability of written notes of events and deliberations which had been made when they were taking place. The diary is opened with an account of Sir Ian's appointment to the organization and command of the expeditionary force and is carried through with almost daily entries until his departure from the theater of operations after his relief from command in October.

Drake, Nelson and Napoleon. By Sir Walter Runciman, Bart. New York. G. P. Putnam's Sons. 1920. 6¼" x 9½". 375 pp. 9 ill. Price \$4.50.

While engaged in writing a series of sea tales of renowned English sailors, the author became so engrossed in the subject of Nelson that he greatly enlarged on his original plan. Upon this, he conceived of the idea of including Napoleon, his principal antagonist, and then Drake, a prototype. More extended, the subjects of the three parts of the volume are: Drake and the Fleet tradition; Nelson and his Circle; Napoleon and his Connection with the World War. At the end of the volume, some English sea songs have been compiled, while a chronological arrangement of some incidents of the life of Nelson forms an appendix.

These are readable stories but are of little real value in the study of the lives of these famous men. The author has written in a free and easy manner, and the book is filled with his expressions of vivid personal opinions. While dwelling largely on the piratical career of Drake and on the private life of Nelson, he attempts to justify their acts on the ground of their sincerity and belief in themselves, going to great length to accomplish this. The discussion of Napoleon

largely consists of a criticism of the leading English statesmen of the period for not accepting his overtures towards peace and an alliance. The author believes that such an alliance at that time would have tended to delay, if not avert, the recent World War; that the last catastrophe was to some extent foreseen by Napoleon; and that his efforts at peace were made with this in mind.

Prepared Radio Measurements with Self-Computing Charts. By Ralph R. Batcher E. E., Associate Member I. R. E., A. I. E. E. New York. Wireless Press. 1921. 9½" x 6". End opening. 132 pp. Price \$2.00.

This book with one exception is composed entirely of charts on which two or more scales are so arranged that by means of a straight edge or stretched thread practically all mathematical problems in radio work can be solved at a glance. There are fifty charts treating of such quantities as "Effective capacities and inductance of aerials; Audibility factors; Bjerkins Formula; Capacity of coils; Condensers, fixed and variable; Decrement; Energy in oscillating circuits; Electrostatic and electromagnetic coupling; Multiple layer coils design" and many others. A table for determining the wave length, frequency and oscillating constants of radio frequency circuits ranging from 100 to 5000 meters is also included.

The accuracy of these charts is equal to the accuracy with which the various factors that enter in the formula can be measured with ordinary means. In many cases the formula applying to the chart, and sometimes a sketch of the circuits whose dimensions are to be determined, are shown on the charts.

The reverse of each page alternates a blank memorandum page and a cross section sheet, ruled twenty lines to the inch. The binding and paper are of fairly good quality, tho it is not believed that the pages would stand any amount of ruling and erasing.

The book is exceptionally useful to the man who designs or constructs his own apparatus and especially to those who have neglected their mathematics.

Canons Electriques. Système Fauchon-Villeplée, Ingénieur des Arts et Manufactures. Berger-Levrault, Nancy-Paris-Strasbourg. 1920. 85 pp. with 13 plates. Price 18 fr.

This pamphlet contains a summary of the work of the authors in designing an electric cannon based upon a system evolved by them. In 1916 they submitted their design to the French Commission of Inventions, but not being favorably entertained, they proceeded to construct a small model which was given a number of trials in 1917 and 1918. As the result of these trials, the French Commission in July 1918, authorized them to prepare the plans for an electric cannon between 30-mm. and 50-mm. caliber. But when the plans and calculations were about completed, the war ended and they were notified that it would be necessary to abandon the project.

In the cannon as designed by them, the projectile is launched in the same manner that the armature of a dynamo is drawn along, i.e., by the direct action of an electric current which traverses the projectile perpendicularly to a field of force to which the projectile is subjected throughout its travel in the cannon. The model cannon constructed was 2 meters long; the projectile 270-mm. in length and weighing 50 gr. was in the form of an arrow consisting of a brass tube with two wings of copper 70-mm. long. The cannon consisted essentially of two pole pieces the length of the cannon, with the inner faces grooved to accommodate the passage of the projectile. To obtain the magnetic field between the pole pieces a system of insulated copper bars ran their whole length. One end was connected to the source of current to fire the cannon, the other end being attached to two insulated rails which acted as a sort of commutator for one of the wings

to slide in. Two similar rails formed the commutator for the other wing and a wire from these rails to the other side of the source of current completed the electric circuit. In the trials both dynamo (60 volts, 600 amperes) and storage battery (figures not given) were used as the source of current. The authors state that in firing one of the projectiles completely passed through an 8" pine board at 25 meters. They further believe that the results of the trials showed the practicability of this system of electric cannon and that large guns could be constructed without any difficulty.

The design and construction of a cannon to launch a projectile weighing 100-kg. with an initial velocity of 1600-m. per second is taken up in detail; this cannon was intended to correspond to the long range gun of the Germans which bombarded Paris. The electric current necessary to be furnished is calculated as 7,200,000 amperes for $\frac{3}{80}$ of a second at a voltage varying from 250 to 1350 volts. The authors believe that, while at first sight these figures seem so large as to make the supply thereof out of the question, they can be obtained when it is remembered that they are momentary and not continuous. They state that the current might be furnished by storage batteries (no discussion or calculation is given) or by inductor type dynamos with heavy rotors and the calculation of the design for the latter to supply the current above required is taken up. The essential principle of this type of dynamo is that the rotation of the heavy rotor can be gradually increased to give a very high speed and consequent momentum, and that when this is obtained, the sudden application of the load in closing the circuit for the launching of the projectile will give a tremendous momentary current due to the magnetic brakeage on the rotor.

Figures are presented showing the economy in weight and cost of an electric cannon over the usual gun of similar power. Its future and different applications are discussed. In conclusion, the officials of the French Government are blamed for their inability to appreciate the advantage of the electric cannon and to supply the necessary funds for the construction thereof.

Conférences sur le Tir de l'Artillerie. By Colonel Tréguier. Paris. Ch.-Lavauzelle & Cie. 1921. $5\frac{1}{2}'' \times 8\frac{3}{4}''$. 182 pp. 60 diagrams. Paper. Price 5 fr.

This is a series of ten lectures delivered by Colonel Treguier to the officers of his regiment which he considered would be of sufficient value to others as to justify their publication. The ten form a complete course on the mechanism of the conduct of fire, the adjustment of fire by different methods under varying conditions of observation, together with a discussion and explanation of the methods of adjustment and the occasions for their use. Special lectures are devoted to high burst ranging and to fire with special projectiles such as gas and smoke.

The study is not based entirely upon the 1917 edition of Artillery Firing but embodies advanced methods which have been developed since that time as well. This pamphlet represents the latest information we have on French development of artillery fire.

Traité de Balistique Extérieure. By Gen. P. Charbonnier. Paris. Gauthier-Villars & Co. 1921. $6\frac{1}{2}'' \times 10''$. 637 pages. 265 figures. Price, 75 francs.

This technical classic by France's famous ballisticians, Gen. Charbonnier, *Ingénieur général* and *Inspecteur général de l'Artillerie Navale*, needs but little comment. This volume is the first to appear of a series of six volumes devoted to this subject, and covers the General Theorems of Ballistics.

This volume is subdivided into two parts, with an introduction covering the generalities of the subject. The contents are broadly as follows:

Introduction: Rational Exterior Ballistics.

Principal Ballistic Problem: The Bases of Rational Exterior Ballistics.

Part I

Book I: Parabolic Ballistics.

Book II: Rectilinear Ballistics.

Part II

Book III: General Properties of the Atmospheric Trajectory.

Book IV: Analytical Ballistic Problems.

The complete series of these works when published will be:

Vol. 1.—General Theorems of Ballistics.

2.—Ballistic Theories.

3.—Secondary Ballistic Problems.

4.—Experimental Exterior Ballistics.

5.—History of Exterior Ballistics.

6.—Numerical Tables.

Practical Track Maintenance. By K. L. Van Auken. Chicago, Ill. Railway Educational Press. 1921. 5½" x 8". 274 pp. 28 ill. Price \$1.90.

While this volume is written for those engaged permanently in track laying and maintenance on commercial railroads, much of it finds ready application to our own railway artillery. The opening chapters discuss the problems connected with the handling and training of labor and the development of track foremen. Incidentally, much of this discussion is pertinent to the development of the non-commissioned officer. The author shows knowledge of good leadership and suggests methods applicable in handling foreigners of the more commonly found nationalities. Several succeeding chapters deal with the various road maintenance activities; laying and renewing ties and rail, ballasting and surfacing the track. This discussion is strictly technical and is based on the approved practice of various railroads. A discussion and outline of the special work to be performed in each season of the year is included here. A description of labor saving tools and appliances followed by a set of tables valuable to the track layer concludes the volume.

Though of limited application, this work covers a subject which should not be overlooked. By its very nature, the use of railway artillery requires a good knowledge of track construction and maintenance.

The Art of War in Italy, 1494-1529. By F. L. Taylor, M.A., M.C., (Cambridge, England.) The Cambridge University Press. 1921. 4¾" x 7½". 231 pp. Maps and diagrams. Cloth. Price \$5.00.

This book is the publication of the Prince Consort Prize Essay for 1920. It is a painstaking historical paper, covering the period of Italian wars between 1494, when Charles VIII of France set out to conquer Naples, and 1529, when these wars were brought to a close by the Treaty of Cambrai.

The period is of significance to the military student, for it covers the process of change in the art of war from the formal code of medieval chivalry to the unfettered initiative of the modern tactician and strategist.

Subsequent to an introductory chapter discussing the influences of medieval times on the military art, come chapters devoted respectively to Strategy, Infantry, Cavalry, Artillery, Tactics, Fortification and Siegecraft, and Military Writers. In an appendix is included an analytical study of the Battle of Ravenna, while the useability of the work is increased by an index and a comprehensive bibliography.

A valuable reference book to the student of either military or political history, it is besides what an essay should be—really interesting to read.